

CHAPTER 4

POINT AND NONPOINT SOURCE CHARACTERIZATION OF THE NORTH FORK FORKED DEER RIVER WATERSHED

- 4.1. Background.
- 4.2. Characterization of HUC-10 Subwatersheds
 - 4.2.A. 0801020401 (Middle Fork Forked Deer River)
 - 4.2.B. 0801020402 (Middle Fork Forked Deer River)
 - 4.2.C. 0801020403 (North Fork Forked Deer River)
 - 4.2.D. 0801020404 (Forked Deer River)

4.1. BACKGROUND. This chapter is organized by HUC-10 subwatershed, and the description of each subwatershed is divided into four parts:

- i. General description of the subwatershed
- ii. Description of point source contributions
 - ii.a. Description of facilities discharging to water bodies listed on the 1998 303(d) list
- iii. Description of nonpoint source contributions

The north Fork Forked Deer River Watershed (HUC 08010204) has been delineated into four HUC 10-digit subwatersheds.

Information for this chapter was obtained from databases maintained by the Division of Water Pollution Control or provided in the WCS (Watershed Characterization System) data set. The WCS used was version 1.1 beta (developed by Tetra Tech, Inc for EPA Region 4) released in 2000.

WCS integrates with ArcView® v3.2 and Spatial Analyst® v1.1 to analyze user-delineated (sub)watersheds based on hydrologically connected water bodies. Reports are generated by integrating WCS with Microsoft® Word. Land Use/Land Cover information from 1992 MRLC (Multi-Resolution Land Cover) data are calculated based on the proportion of county-based land use/land cover in user-delineated (sub)watersheds. Nonpoint source data in WCS are based on agricultural census data collected 1992–1998; nonpoint source data were reviewed by Tennessee NRCS staff.

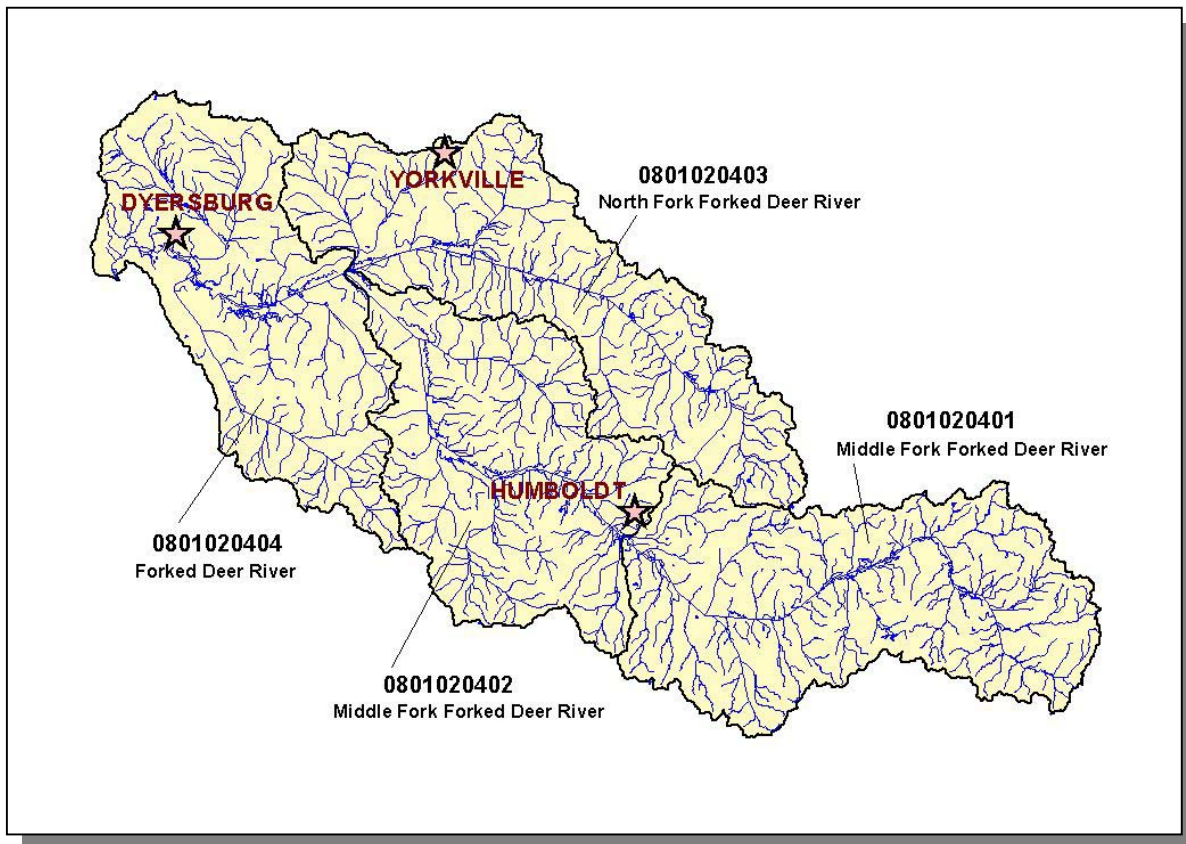


Figure 4-1. The North Fork Forked Deer River Watershed is Composed of Four USGS-Delineated Subwatersheds (10-Digit Subwatersheds). Locations of Dyersburg, Humboldt, and Yorkville are shown for reference.

4.2. CHARACTERIZATION OF HUC-10 SUBWATERSHEDS. The Watershed Characterization System (WCS) software and data sets provided by EPA Region IV were used to characterize each subwatershed in the North Fork Forked Deer River Watershed.

HUC-10	HUC-12
0801020401	080102040101 (Middle Fork Forked Deer River)
	080102040102 (Middle Fork Forked Deer River)
	080102040103 (Middle Fork Forked Deer River)
	080102040104 (Middle Fork Forked Deer River)
	080102040105 (Middle Fork Forked Deer River)
0801020402	080102040201 (Middle Fork Forked Deer River)
	080102040202 (Cypress Creek)
	080102040203 (Middle Fork Forked Deer River)
	080102040204 (Buck Creek)
0801020403	080102040301 (North Fork Forked Deer River)
	080102040302 (North Fork Forked Deer River)
	080102040303 (Cain Creek)
	080102040304 (Mud Creek)
	080102040305 (North Fork Forked Deer River)
	080102040306 (Doakville Creek)
0801020404	080102040401 (Forked Deer River)
	080102040402 (Forked Deer River)
	080102040403 (Pond Creek)
	080102040404 (Lewis Creek)

Table 4-1. HUC-12 Drainage Areas are Nested Within HUC-10 Drainages. NRCS worked with USGS to delineate the HUC-10 and HUC-12 drainage boundaries.

4.2.A. 0801020401.

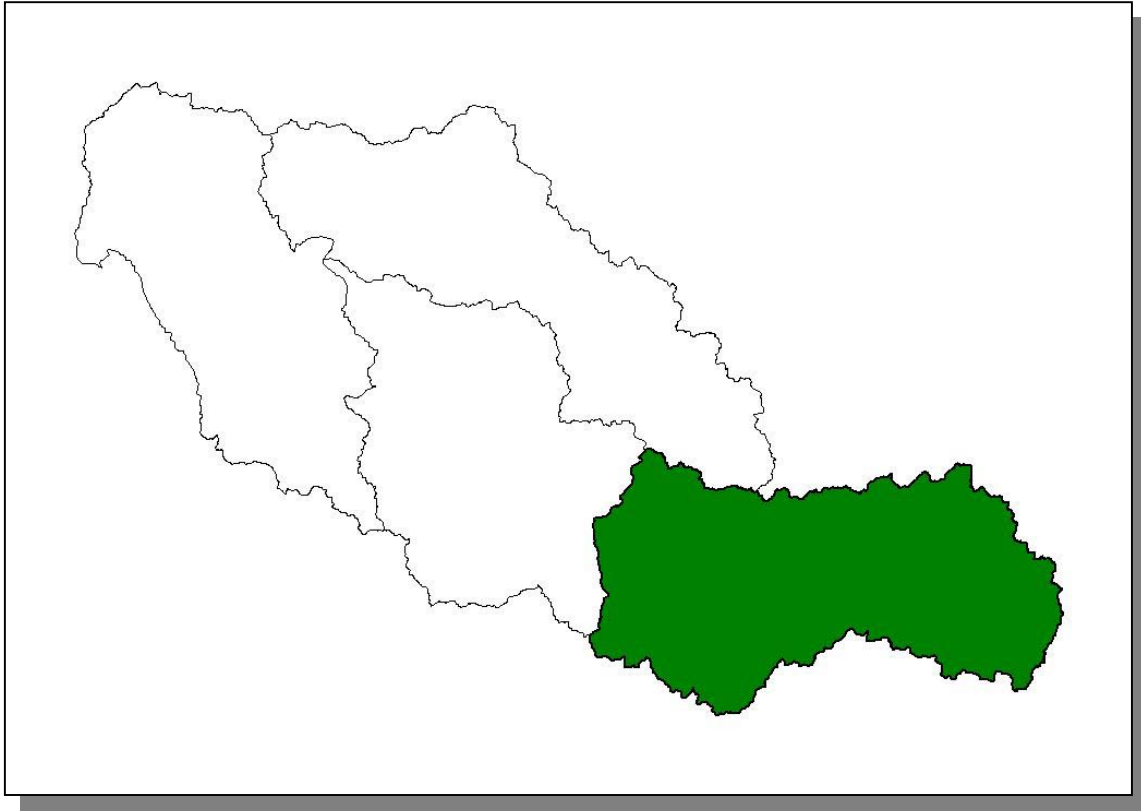


Figure 4-2. Location of Subwatershed 0801020401. All North Fork Forked Deer River HUC-10 subwatershed boundaries are shown for reference.

4.2.A.i. General Description.

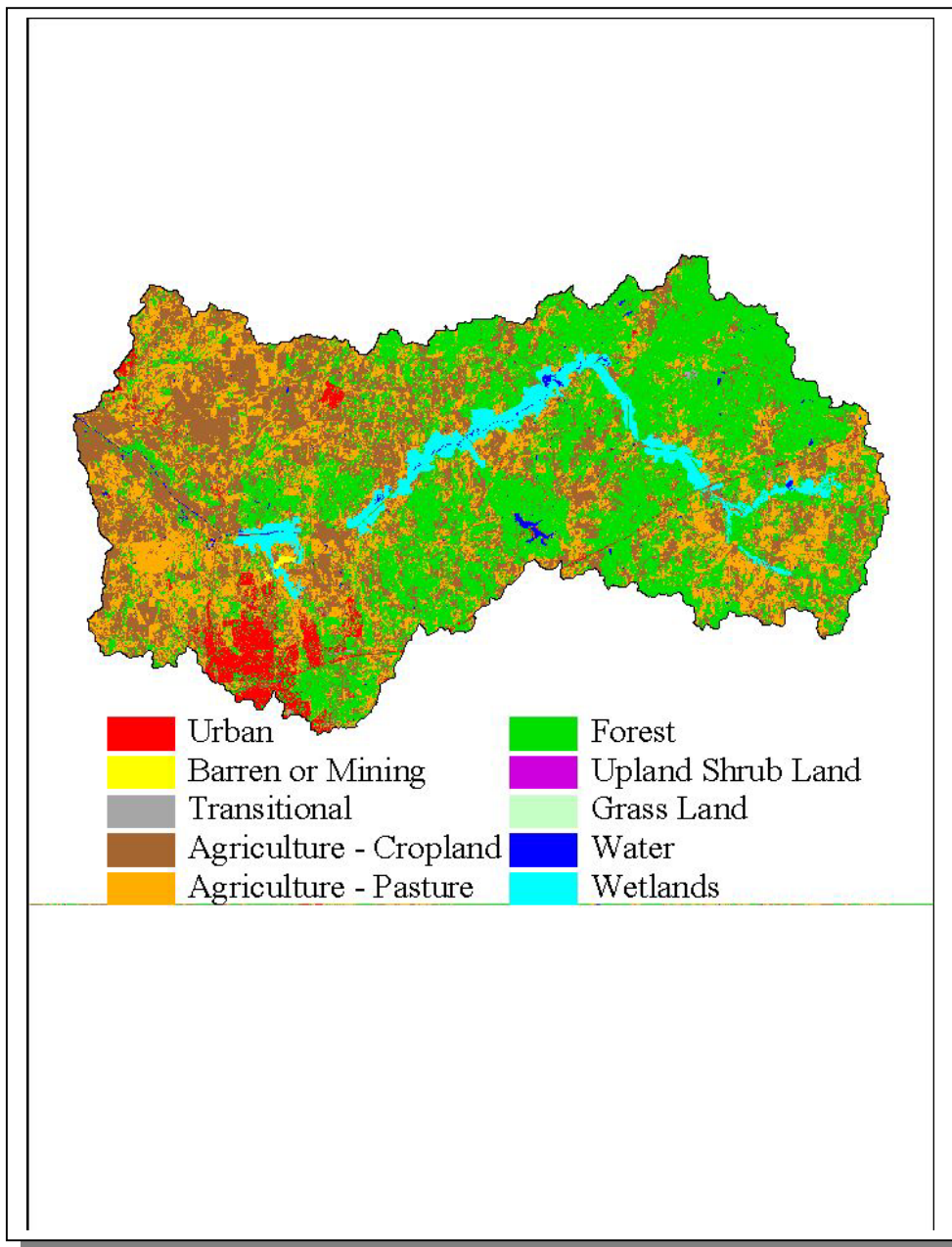


Figure 4-3. Illustration of Land Use Distribution in Subwatershed 0801020401.

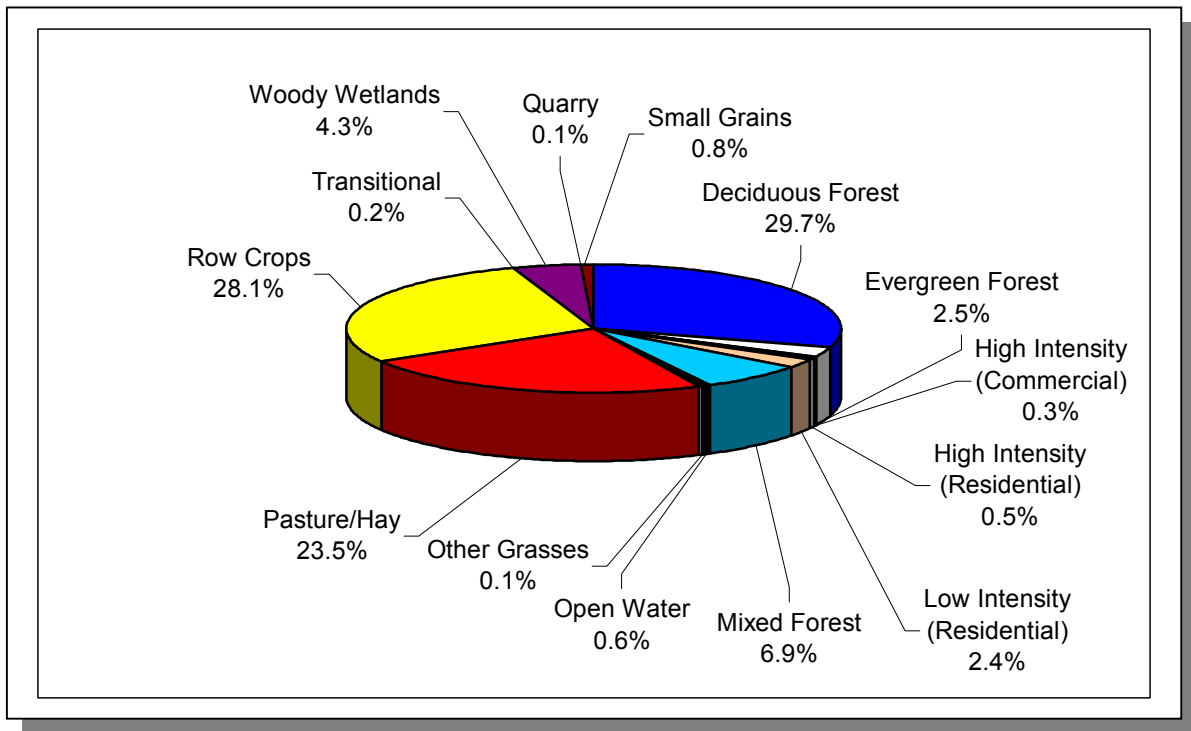


Figure 4-4. Land Use Distribution in Subwatershed 0801020401. More information is provided in NFFD-Appendix IV.

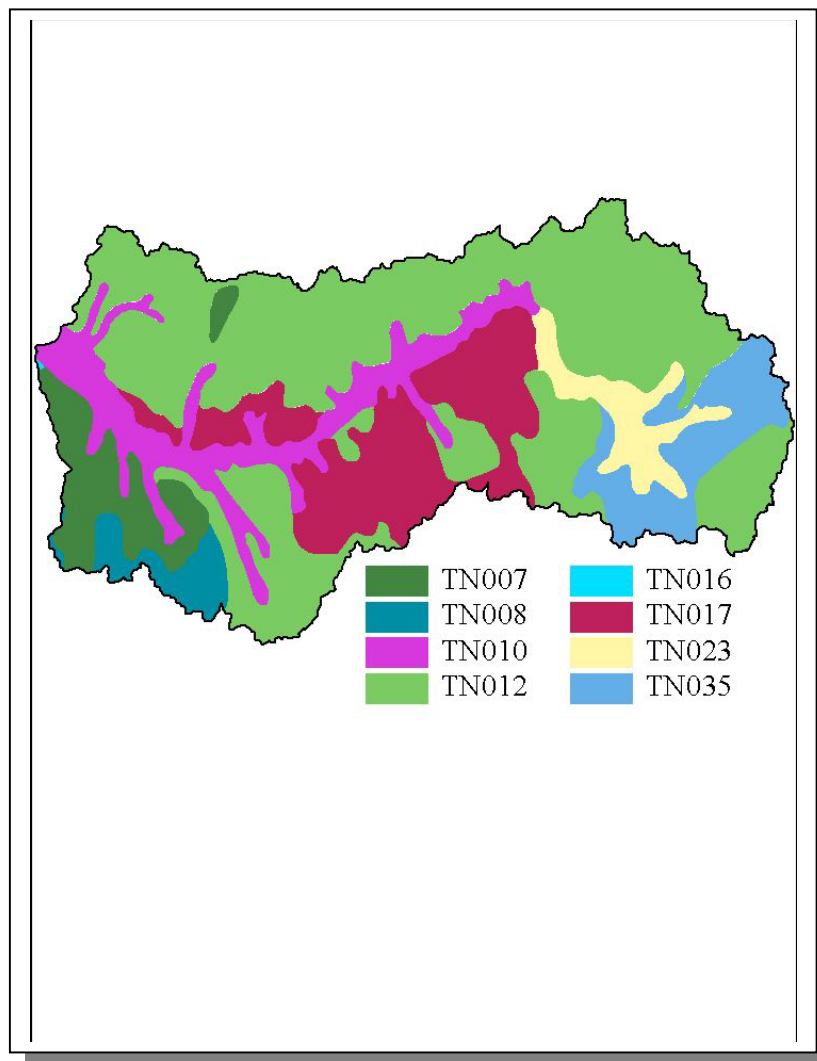


Figure 4-5. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0801020401.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN007	29.00	C	1.30	5.36	Silty Loam	0.48
TN008	2.00	C	1.38	5.20	Silty Loam	0.48
TN010	81.00	C	1.33	5.11	Silty Loam	0.44
TN012	1.00	C	2.52	5.13	Silty Loam	0.39
TN016	0.00	C	1.30	6.47	Silty Loam	0.44
TN017	0.00	B	1.81	5.26	Silty Loam	0.45
TN023	17.00	C	1.35	5.12	Silty Loam	0.42
TN035	16.00	C	1.46	4.97	Silty Loam	0.40

Table 4-2. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0801020401. More details are provided in NFFD-Appendix IV.

County	COUNTY POPULATION		Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED		% CHANGE
	1990	1997 Est.		1990	1997	
Carroll	27,514	28,990	4.06	1,117	1,177	5.4
Crockett	13,378	13,841	0.71	94	89	4.3
Gibson	46,315	48,083	5.05	2,340	2,429	3.8
Henderson	21,844	24,000	13.65	2,981	3,275	9.9
Madison	77,982	84,942	24.54	19,135	20,843	8.9
Totals	187,033	199,856		25,667	27,822	8.4

Table 4-3. Population Estimates in Subwatershed 0801020401.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Humboldt	Madison	9,634	3,992	3,878	110	4
Jackson	Madison	48,949	20,739	20,197	512	30
Medina	Gibson	658	335	330	5	0
Total		59,241	25,066	24,405	627	34

Table 4-4. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0801020401.

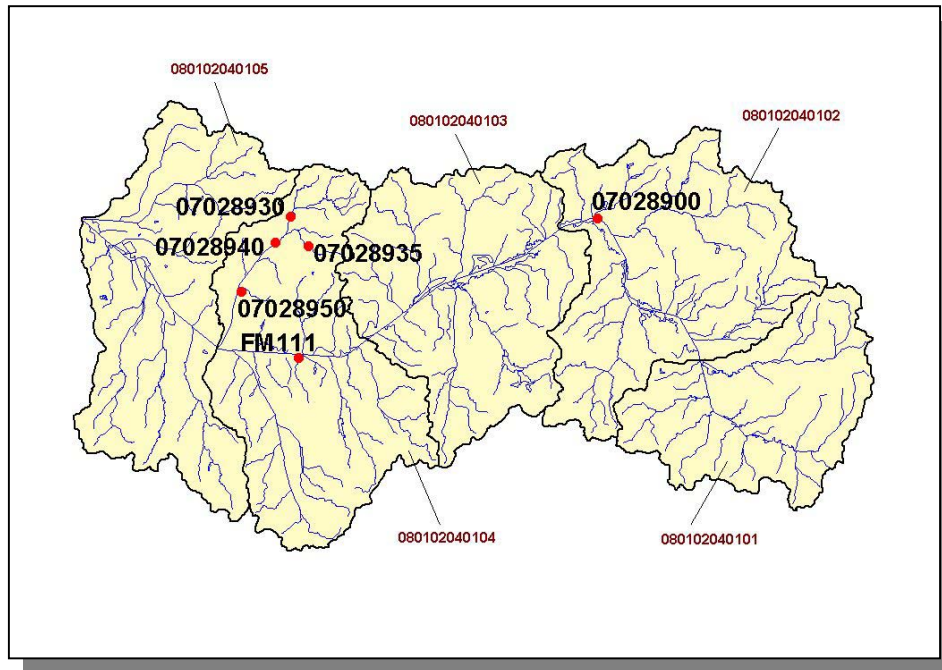


Figure 4-6. Location of Historical Streamflow Data Collection Sites in Subwatershed 0801020401. Subwatershed 080102040101, 080102040102, 080102040103, 080102040104, and 080102040105 boundaries are shown for reference. More information is provided in NFFD-Appendix IV.



Figure 4-7. Location of STORET Monitoring Sites in Subwatershed 0801020401. Subwatershed 080102040101, 080102040102, 080102040103, 080102040104, and 080102040105 boundaries are shown for reference. More information is provided in NFFD-Appendix IV.

4.2.A.ii. Point Source Contributions.

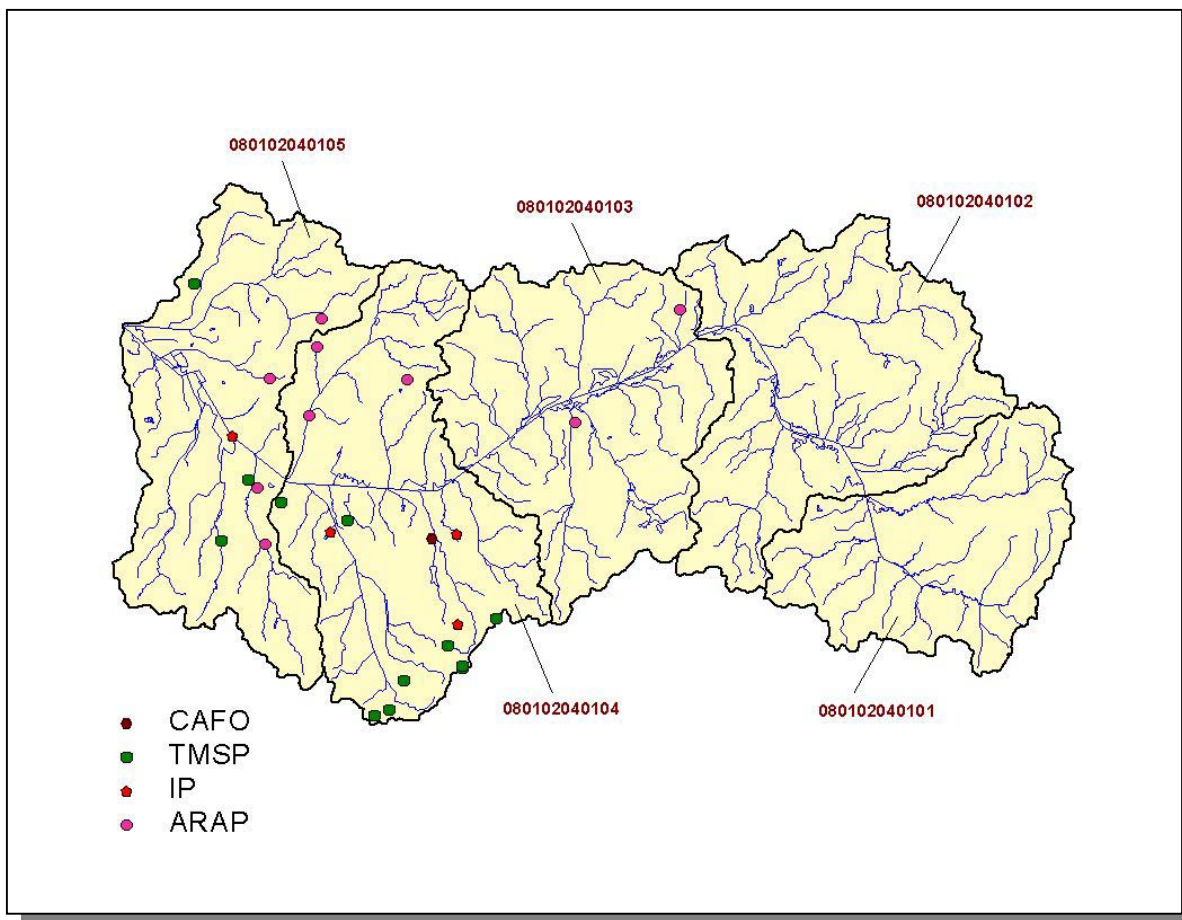


Figure 4-8. Location of Active Point Source Facilities in Subwatershed 0801020401. Subwatershed 080102040101, 080102040102, 080102040103, 080102040104, and 080102040105 boundaries are shown for reference. More information is provided in the following figures.

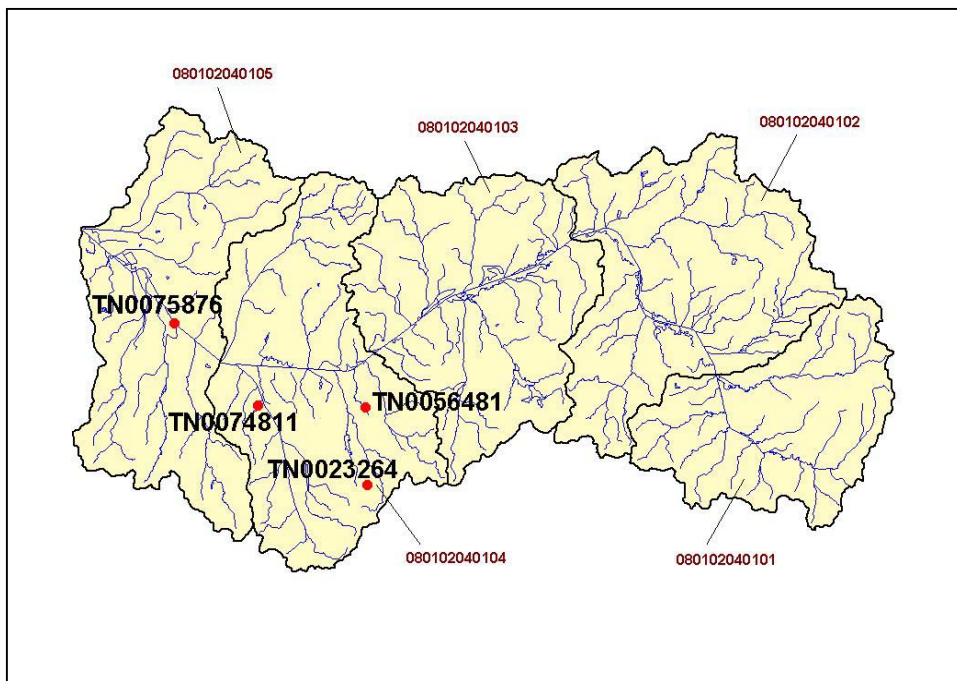


Figure 4-9. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 0801020401. Subwatershed 080102040101, 080102040102, 080102040103, 080102040104, and 080102040105 boundaries are shown for reference. More information, including the names of facilities, is provided in NFFD-Appendix IV.

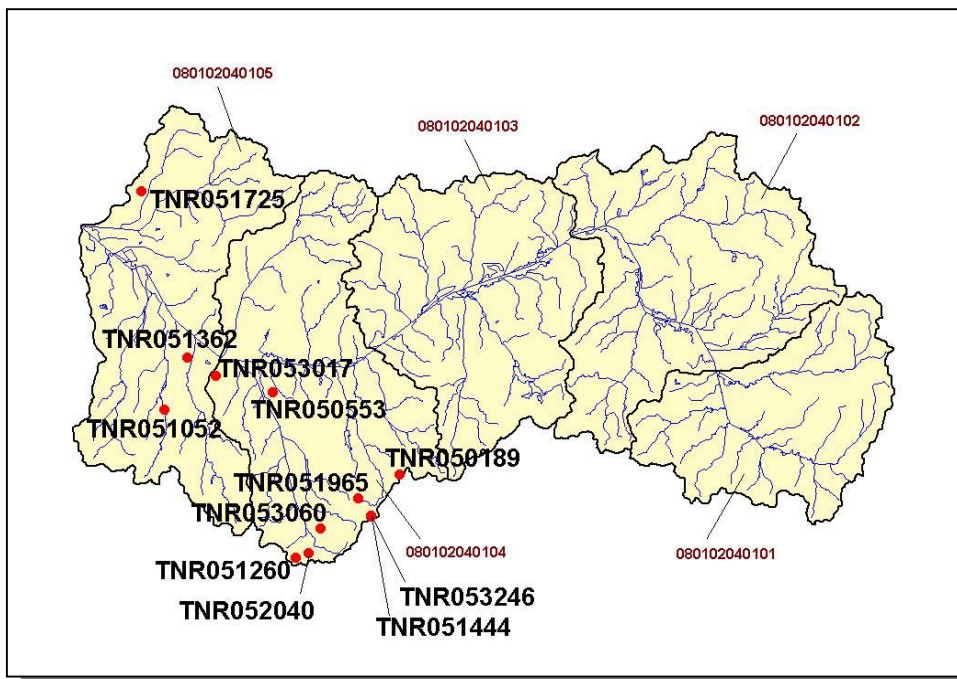


Figure 4-10. Location of TMSP Facilities in Subwatershed 0801020401. Subwatershed 080102040101, 080102040102, 080102040103, 080102040104, and 080102040105 boundaries are shown for reference. More information, including the names of facilities, is provided in NFFD-Appendix IV.

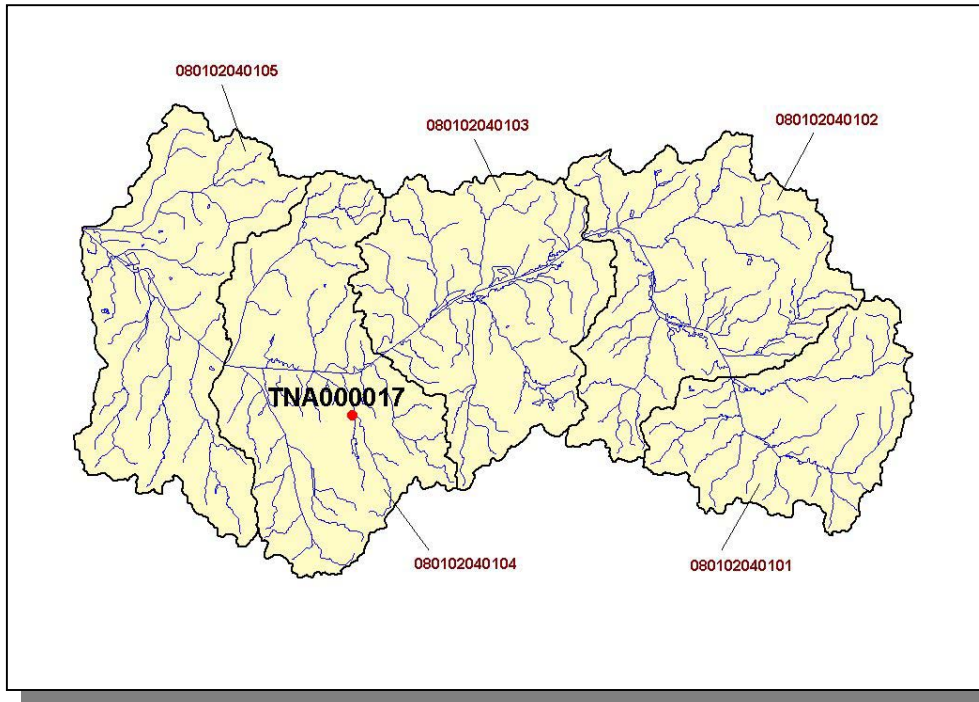


Figure 4-11. Location of CAFO Facilities in Subwatershed 0801020401. Subwatershed 080102040101, 080102040102, 080102040103, 080102040104, and 080102040105 boundaries are shown for reference. CAFO rules may be found at <http://cfpub.epa.gov/npdes/afo/cafofinalrule.cfm>. More information, including the names of facilities, is provided in NFFD-Appendix IV.

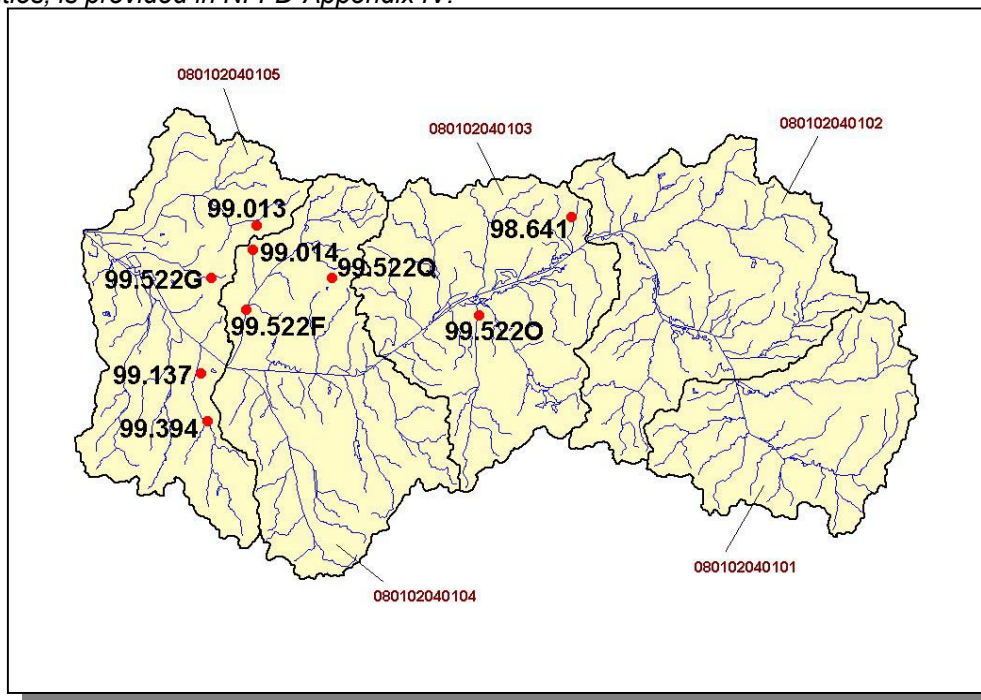


Figure 4-12. Location of ARAP Sites (Individual Permits) in Subwatershed 0801020401. Subwatershed 080102040101, 080102040102, 080102040103, 080102040104, and 080102040105 boundaries are shown for reference. More information, including the names of facilities, is provided in NFFD-Appendix IV.

4.2.A.ii.a. Dischargers to Water Bodies Listed on the 1998 303(d) List

There are three NPDES facilities discharging to water bodies listed on the 1998 303(d) list in Subwatershed 0801020401:

- TN0023264 (Nova School) discharges to an unnamed trib to Johnson Creek @ RM 4.4
- TN0074811 (Ameristeel) discharges to Dyer Creek @ RM 1.5, and to unnamed trib to Middle Fork Forked Deer River @ RM 32.5
- TN0075876 (Middle Fork STP) discharges to Middle Fork Forked Deer River @ RM 29.1

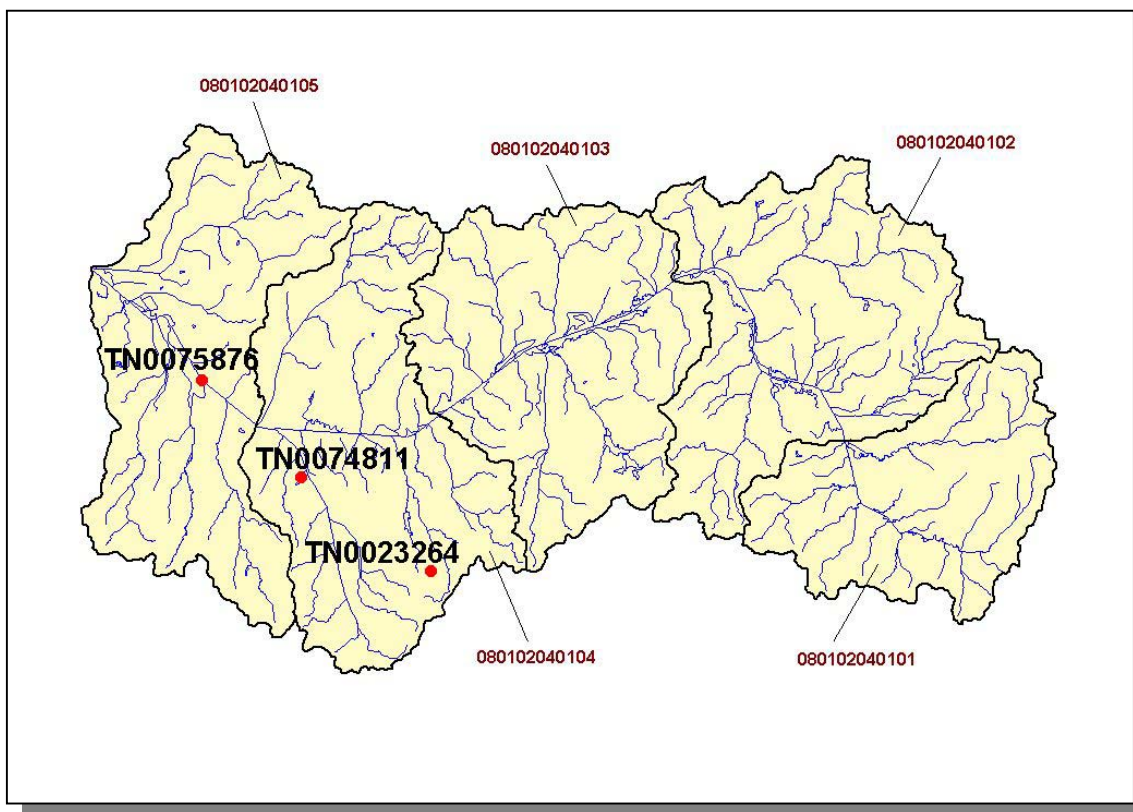


Figure 4-13. Location of NPDES Dischargers to Water Bodies Listed on the 1998 303(d) List in Subwatershed 0801020401. Subwatershed 080102040101, 080102040102, 080102040103, 080102040104, and 080102040105 boundaries are shown for reference. The names of facilities are provided in NFFD-Appendix IV.

PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0023264			0.00		0.01200
TN0074811					0.47000
TN0075876	21.91	22.43	23.01	20.81	4.00000

Table 4-5. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 0801020401. Data are in million gallons per day (MGD). Data were obtained from the USGS publication Flow Duration and Low Flows of Tennessee Streams Through 1992 or from permit files.

PERMIT #	CBOD ₅	pH	WET	NH ₃	FECAL	Fe	TRC	SETTLEABLE SOLIDS	OIL and GREASE	TSS	DO
TN0023264	X	X		X	X		X	X		X	X
TN0074811		X	X			X	X		X	X	
TN0075876	X	X	X	X	X		X	X		X	X

Table 4-6. Parameters Monitored for Daily Maximum (mg/L) Limits for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 0801020401. CBOD₅, Carbonaceous Biochemical Oxygen Demand (5-Day); WET, Whole Effluent Toxicity; TRC, Total Residual Chlorine; TSS, Total Suspended Solids; DO, Dissolved Oxygen.

4.2.A.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
3,880	13,829	33	12	0	7,306	49

Table 4-7. Summary of Livestock Count Estimates in Subwatershed 0801020401. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Carroll	169.1	169.1	0.6	2.0
Crockett	15.1	15.1	0.3	1.6
Gibson	36.4	36.4	2.0	8.6
Henderson	158.5	158.5	3.6	12.8
Totals	379.1	379.1	6.5	25.0

Table 4-8. Forest Acreage and Annual Removal Rates (1987-1994) in Subwatershed 0801020401.

CROPS	TONS/ACRE/YEAR
Corn (Row Crops)	11.47
Soybeans (Row Crops)	8.18
Sorghum (Row Crops)	6.38
Cotton (Row Crops)	10.90
Grass (Hayland)	0.56
Legume (Hayland)	0.07
Grass (Pastureland)	0.52
Grass, Forbs, Legumes (Mixed Pasture)	2.29
Forest Land (Not Grazed)	0.00
All Other Close Grown Cropland	0.47
Other Vegetable and Truck Crops	7.81
Conservation Reserve Program Land	0.51
Other Land in Farms	0.35
Other Cropland (Not Planted)	3.93
Nonagricultural Land Use	0.00
Farmsteads and Ranch Headquarters	0.51

Table 4-9. Annual Estimated Total Soil Loss in Subwatershed 0801020401.

4.2.B. 0801020402.

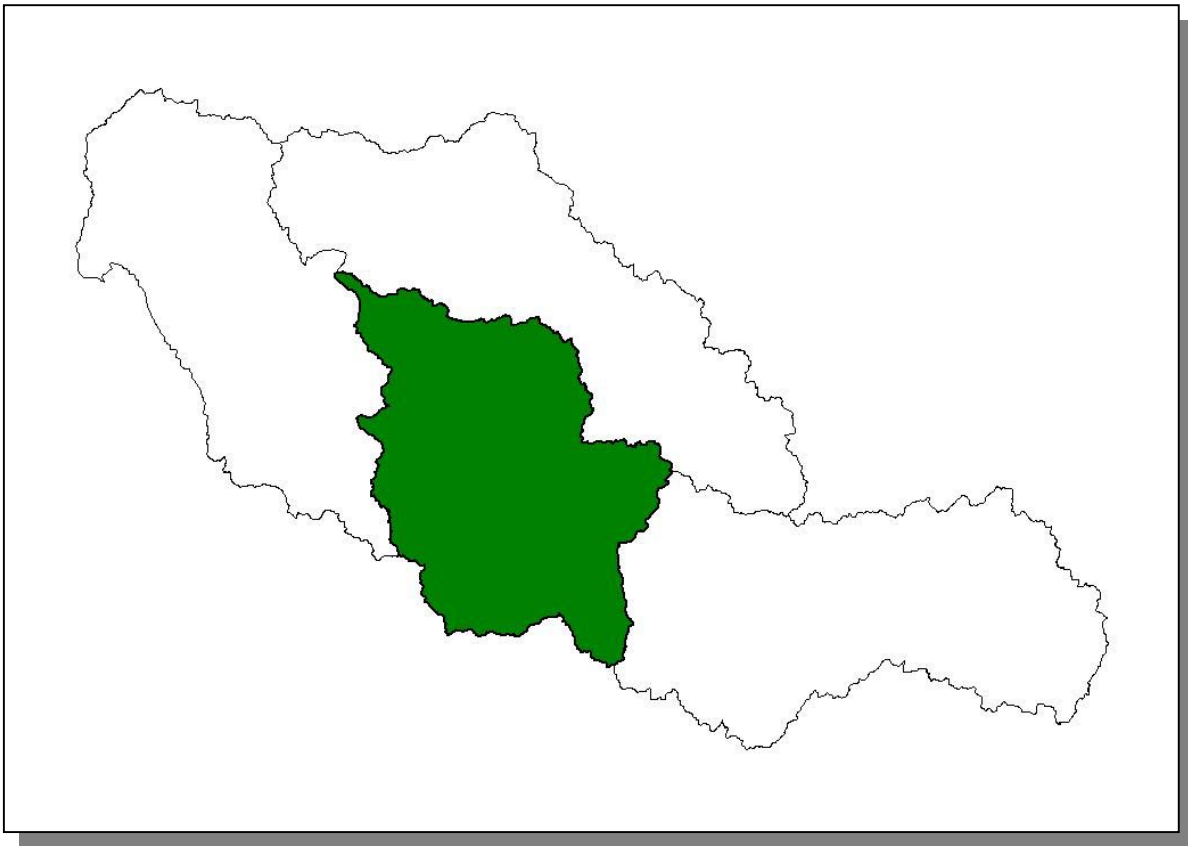


Figure 4-14. Location of Subwatershed 0801020402. All North Fork Forked Deer HUC-10 subwatershed boundaries are shown for reference.

4.2.B.i. General Description.

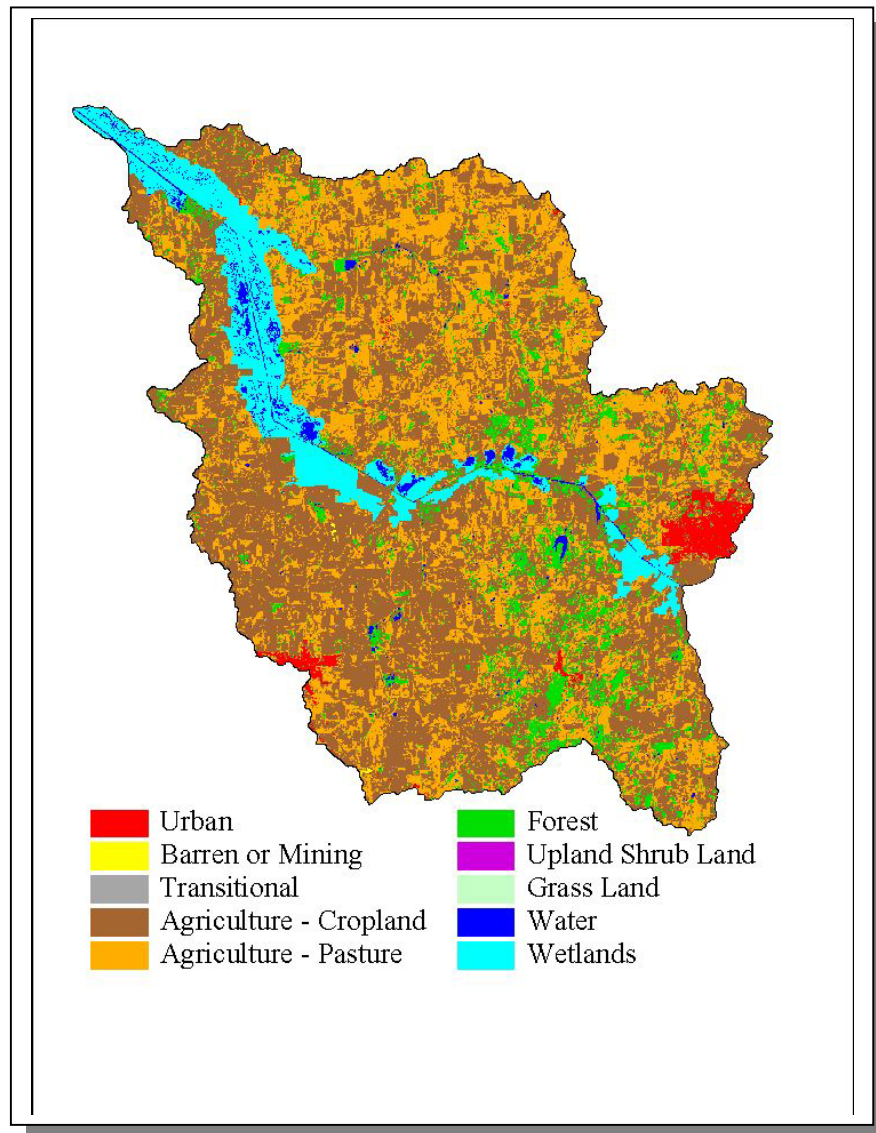


Figure 4-15. Illustration of Land Use Distribution in Subwatershed 0801020402.

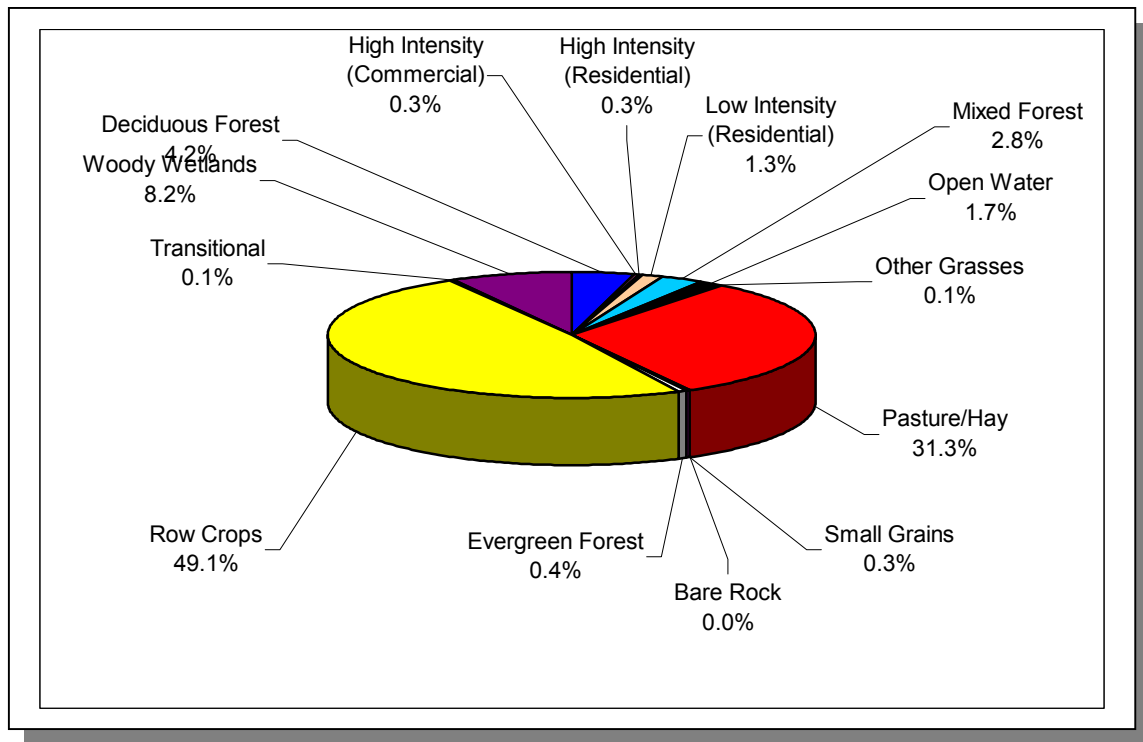


Figure 4-16. Land Use Distribution in Subwatershed 0801020402. More information is provided in NFFD-Appendix IV.

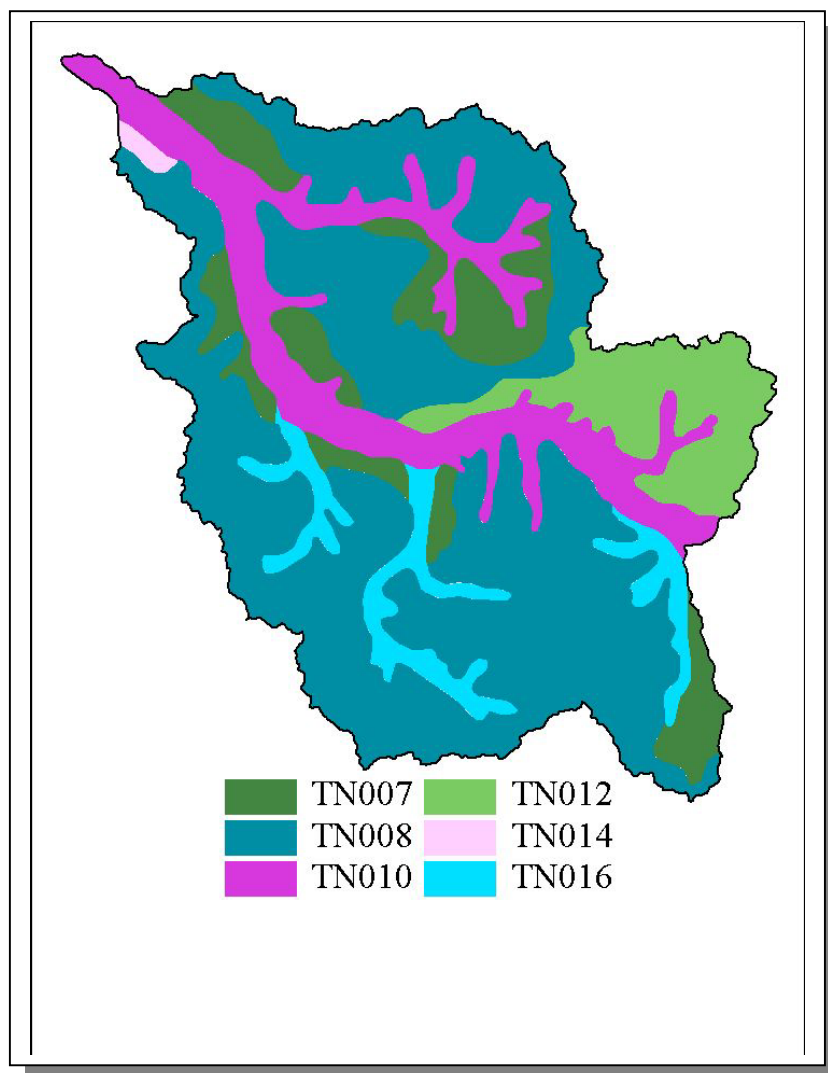


Figure 4-17. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0801020402.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN007	29.00	C	1.30	5.36	Silty Loam	0.48
TN008	2.00	C	1.38	5.20	Silty Loam	0.48
TN010	81.00	C	1.33	5.11	Silty Loam	0.44
TN012	1.00	C	2.52	5.13	Silty Loam	0.39
TN014	30.00	C	1.30	5.12	Silty Loam	0.47
TN016	0.00	C	1.30	6.47	Silty Loam	0.44

Table 4-10. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0801020402. More information is provided in NFFD-Appendix IV.

County	COUNTY POPULATION		Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED		PERCENT CHANGE
	1990	1997 Est.		1990	1997	
Crockett	13,378	13,841	42.34	5,664	5,860	3.5
Dyer	34,854	36,465	0.13	46	48	4.3
Gibson	46,315	48,083	16.85	7,804	8,102	3.8
Madison	77,982	84,942	1.21	941	1,025	8.9
Total	172,529	183,331		15,455	15,035	4.0

Table 4-11. Population Estimates in Subwatershed 0801020402.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Alamo	Crockett	2,400	1,044	1,001	43	0
Bells	Crockett	1,643	676	651	21	4
Gadsden	Crockett	587	219	9	207	3
Humboldt	Gibson	9,634	3,992	3,878	110	4
Total		14,264	5,931	5,539	381	11

Table 4-12. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0801020402.

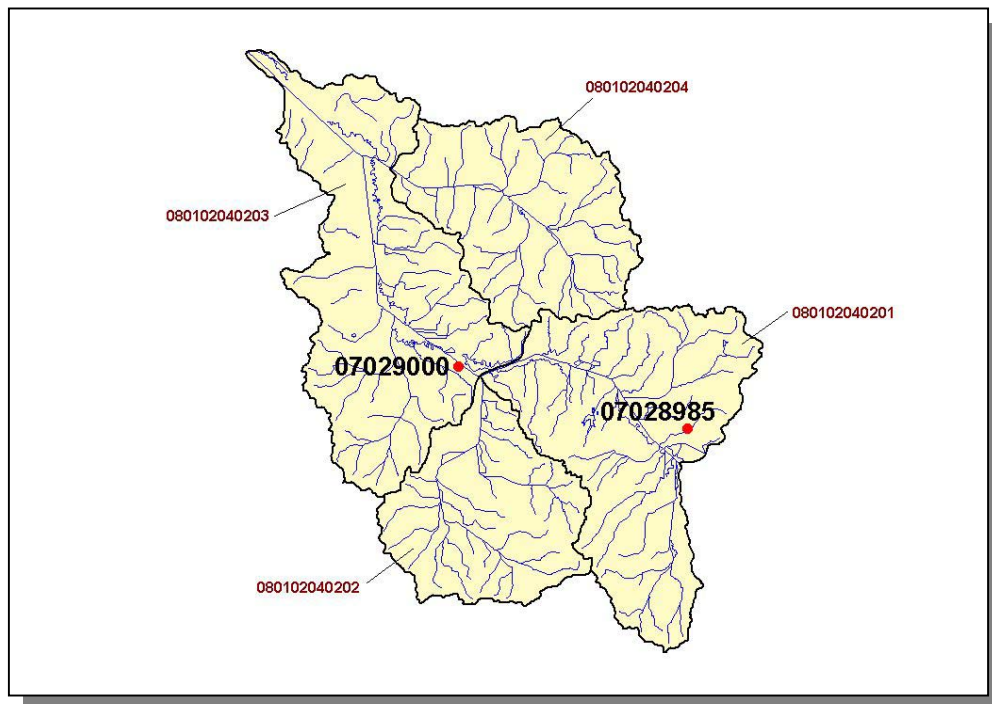


Figure 4-18. Location of Historical Streamflow Data Collection Sites in Subwatershed 0801020402. Subwatershed 080102040201, 080102040202, 080102040203, and 080102040204 boundaries are shown for reference. More information is provided in NFFD-Appendix IV.

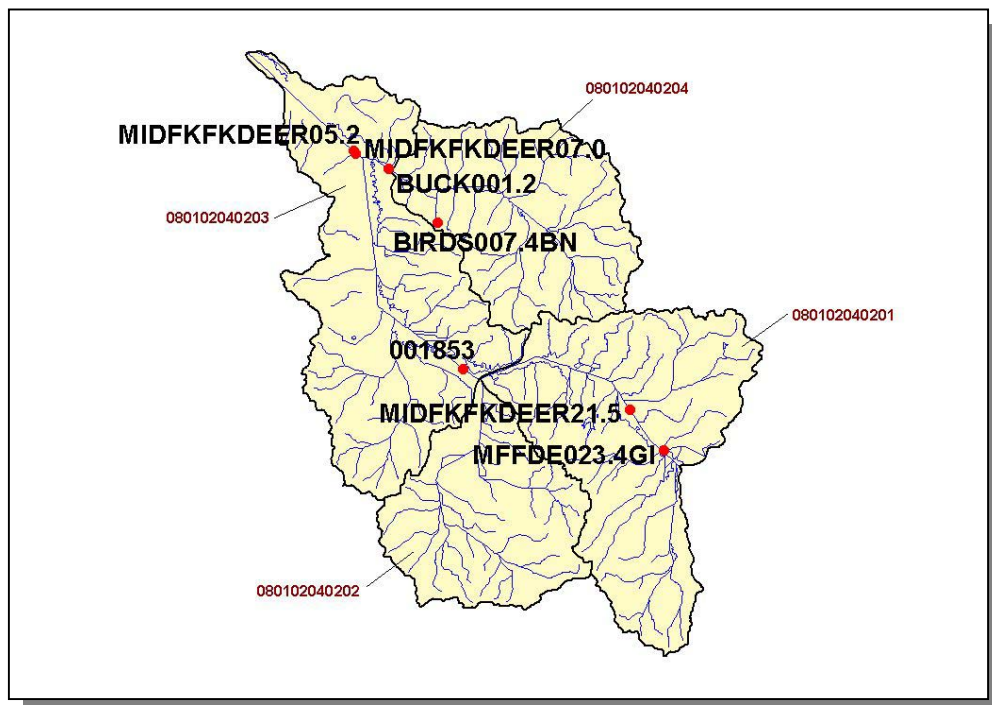


Figure 4-19. Location of STORET Monitoring Sites in Subwatershed 0801020402. Subwatershed 080102040201, 080102040202, 080102040203, and 080102040204 boundaries are shown for reference. More information is provided in NFFD-Appendix IV.

4.2.B.ii. Point Source Contributions.

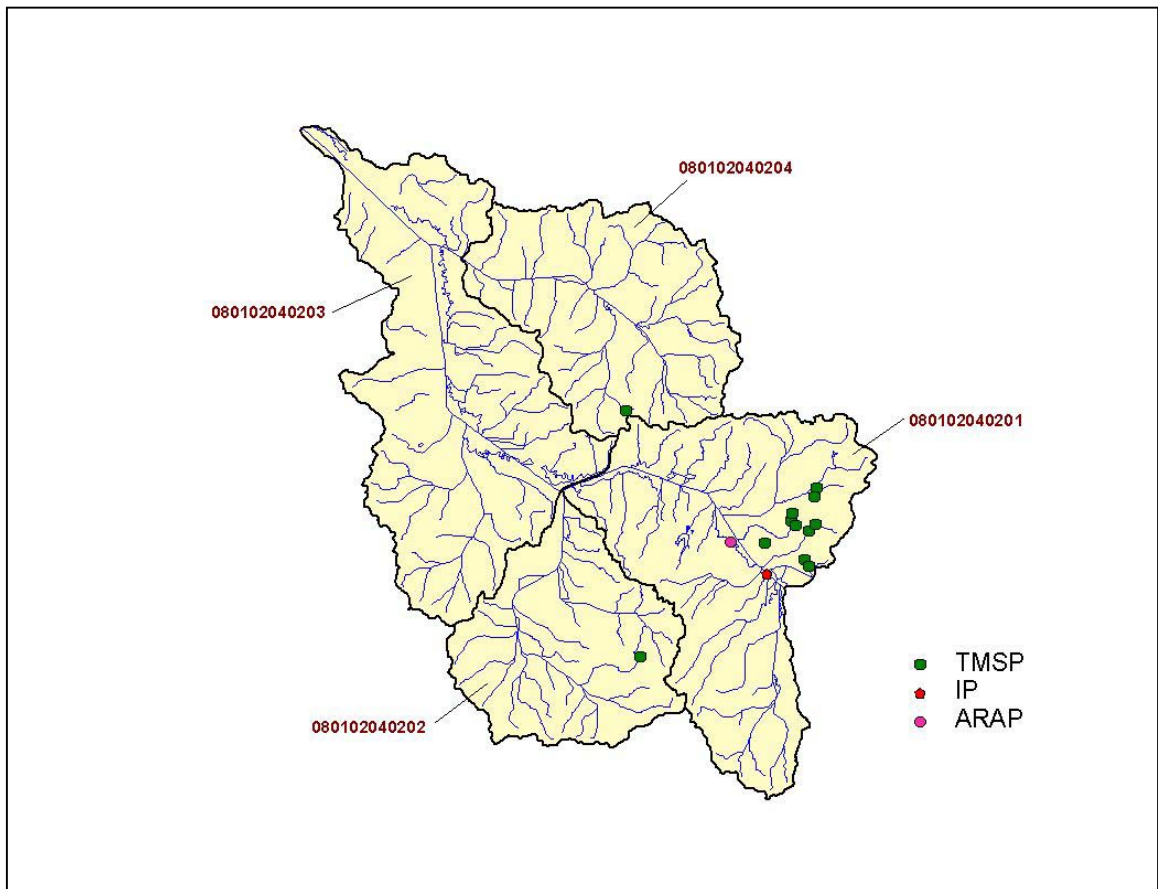


Figure 4-20. Location of Active Point Source Facilities in Subwatershed 0801020402. Subwatershed 080102040201, 080102040202, 080102040203, and 080102040204 boundaries are shown for reference. More information is provided in the following figures.



Figure 4-21. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 0801020402. Subwatershed 080102040201, 080102040202, 080102040203, and 080102040204 boundaries are shown for reference. More information, including the names of facilities, is provided in NFFD-Appendix IV.

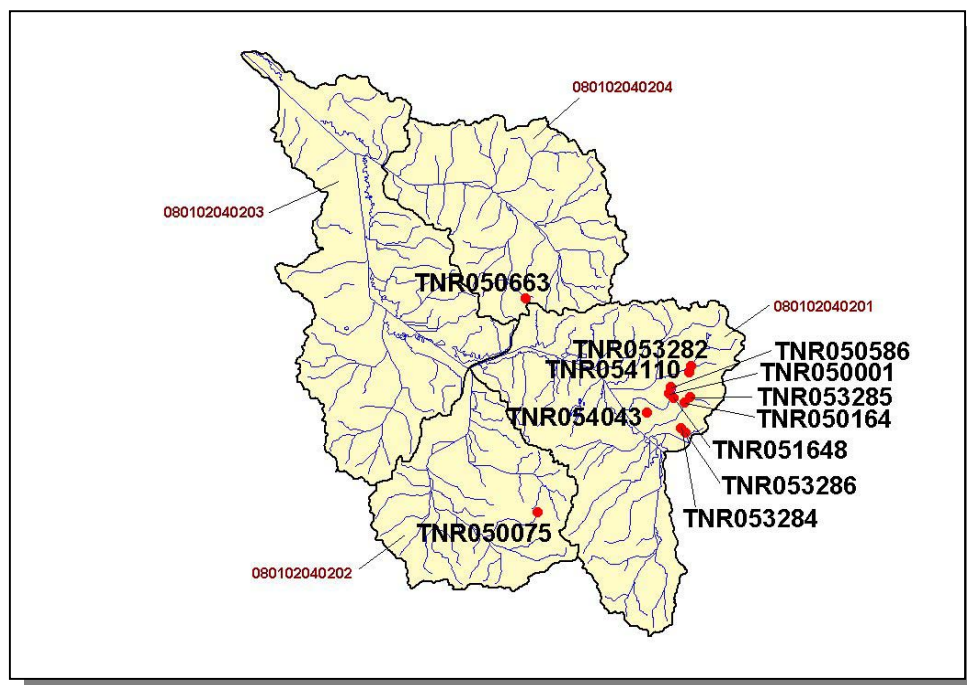


Figure 4-22. Location of TMSP Facilities in Subwatershed 0801020402. Subwatershed 080102040201, 080102040202, 080102040203, and 080102040204 boundaries are shown for reference. More information, including the names of facilities, is provided in NFFD-Appendix IV.

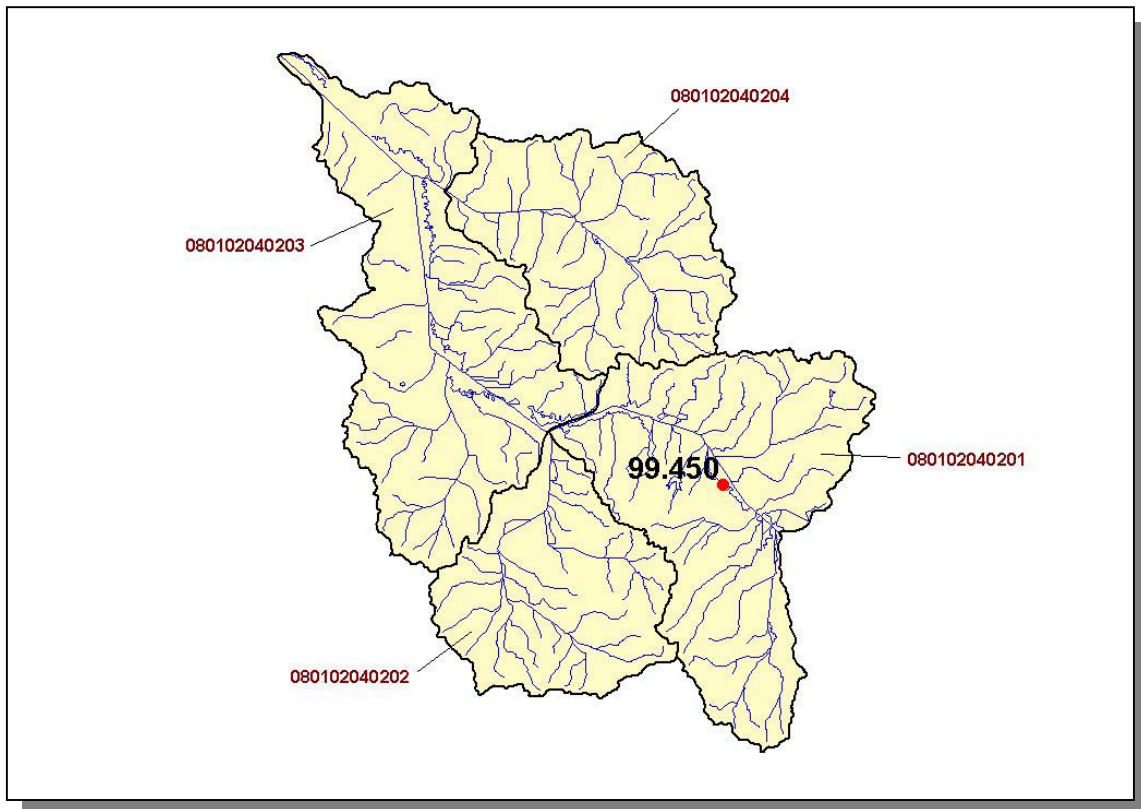


Figure 4-23. Location of ARAP Sites (Individual Permits) in Subwatershed 0801020402. Subwatershed 080102040201, 080102040202, 080102040203, and 080102040204 boundaries are shown for reference. More information, including the names of facilities, is provided in NFFD-Appendix IV.

4.2.A.ii.a. Dischargers to Water Bodies Listed on the 1998 303(d) List

There is one NPDES facility discharging to water bodies listed on the 1998 303(d) list in Subwatershed 0801020402:

- TN0062588 (Humboldt STP) discharges to Middle Fork Forked Deer River @ RM 23.4



Figure 4-24. Location of NPDES Dischargers to Water Bodies Listed on the 1998 303(d) List in Subwatershed 0801020402. Subwatershed 080102040201, 080102040202, 080102040203, and 080102040204 boundaries are shown for reference. The names of facilities are provided in NFFD-Appendix IV.

PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0062588	48.60	48.93	49.77	47.05	2.60000

Table 4-13. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 0801020402. Data are in million gallons per day (MGD). Data were obtained from the USGS publication Flow Duration and Low Flows of Tennessee Streams Through 1992 or from permit files.

PERMIT #	CBOD ₅	pH	WET	NH ₃	CN	FECAL	TRC	SETTLEABLE SOLIDS	TSS	DO
TN0062588	X	X	X	X	X	X	X	X	X	X

Table 4-14. Parameters Monitored for Daily Maximum (mg/L) Limits for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 0801020402. CBOD₅, Carbonaceous Biochemical Oxygen Demand (5-Day); WET, Whole Effluent Toxicity; TRC, Total Residual Chlorine; TSS, Total Suspended Solids; DO, Dissolved Oxygen.

4.2.B.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
3,237	6,816	42	7	0	1,576	30

Table 4-15. Summary of Livestock Count Estimates in Subwatershed 0801020402. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Crockett	15.1	15.1	0.3	1.6
Dyer	40.4	40.4	0.8	2.8
Gibson	36.4	36.4	2.0	8.6
Total	91.9	91.9	3.1	13.0

Table 4-16. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 0801020402.

CROPS	TONS/ACRE/YEAR
Grass (Hayland)	0.35
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Corn (Row Crops)	7.66
Soybeans (Row Crops)	11.45
Cotton (Row Crops)	15.10
Sorghum (Row Crops)	6.37
Wheat (Close Grown Cropland)	3.56
Oats (Close Grown Cropland)	3.34
All Other Close Grown Cropland	0.47
Grass (Pastureland)	0.50
Grass, Forbs, Legumes (Mixed Pasture)	0.62
Other Land in Farms (Other Farmland)	0.70
Conservation Reserve Program Lands	0.54
Other Vegetable and Truck Crops	7.81
All Other Crops not Planted	0.68
Non Agricultural Land Use	0.00
Farmsteads and Ranch Headquarters	0.31

Table 4-17. Annual Estimated Total Soil Loss in Subwatershed 0801020402.

4.2.C. 0801020403.

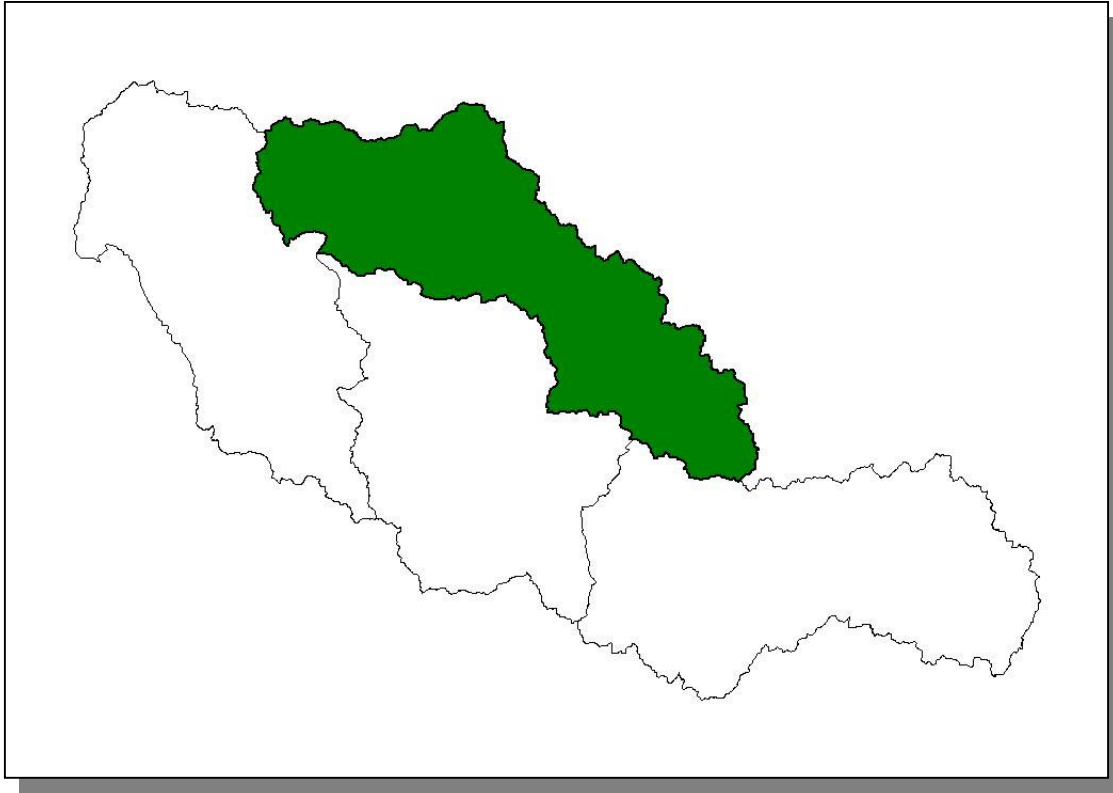


Figure 4-25. Location of Subwatershed 0801020403. All North Fork Forked Deer HUC-10 subwatershed boundaries are shown for reference.

4.2.C.i. General Description.

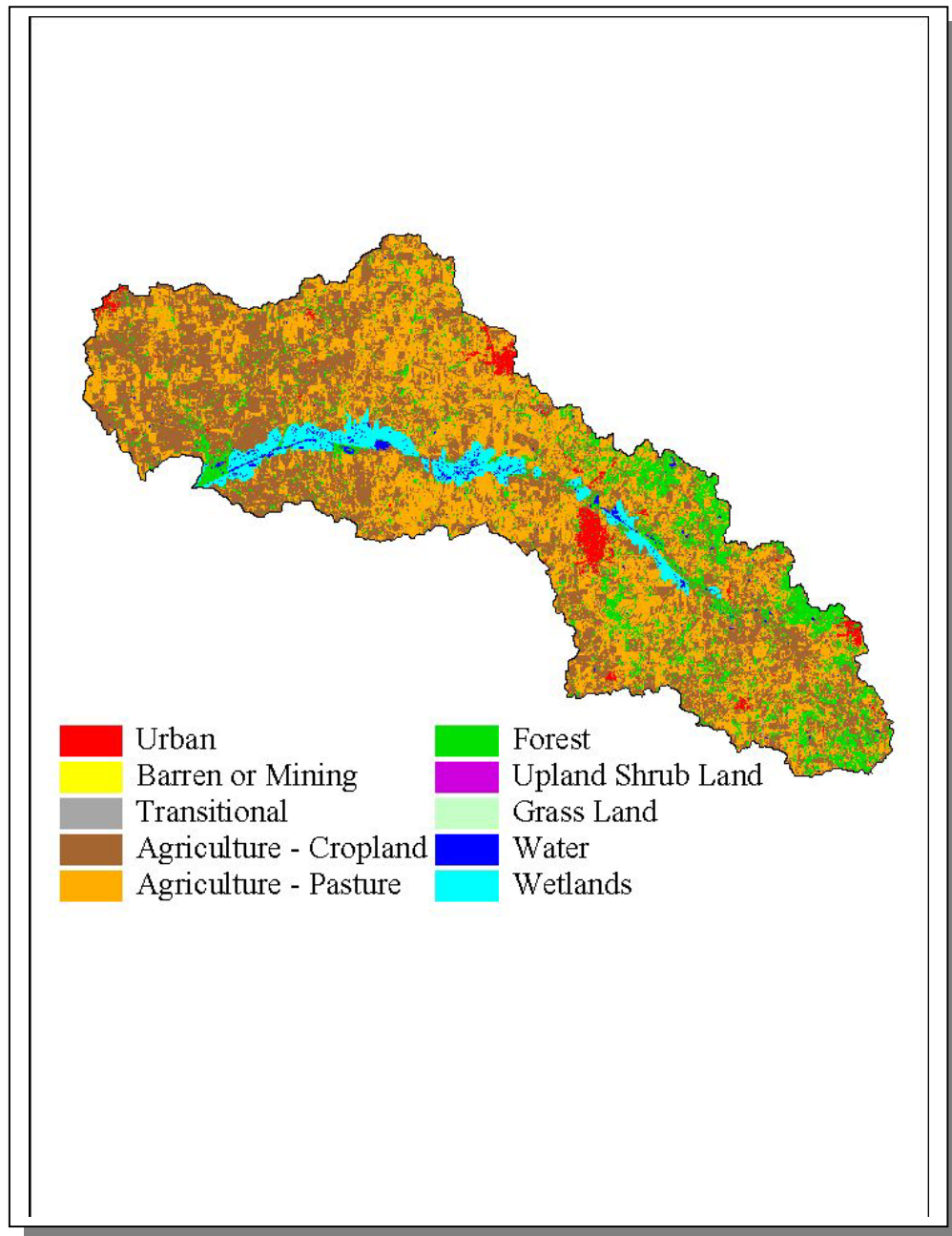


Figure 4-26. Illustration of Land Use Distribution in Subwatershed 0801020403.

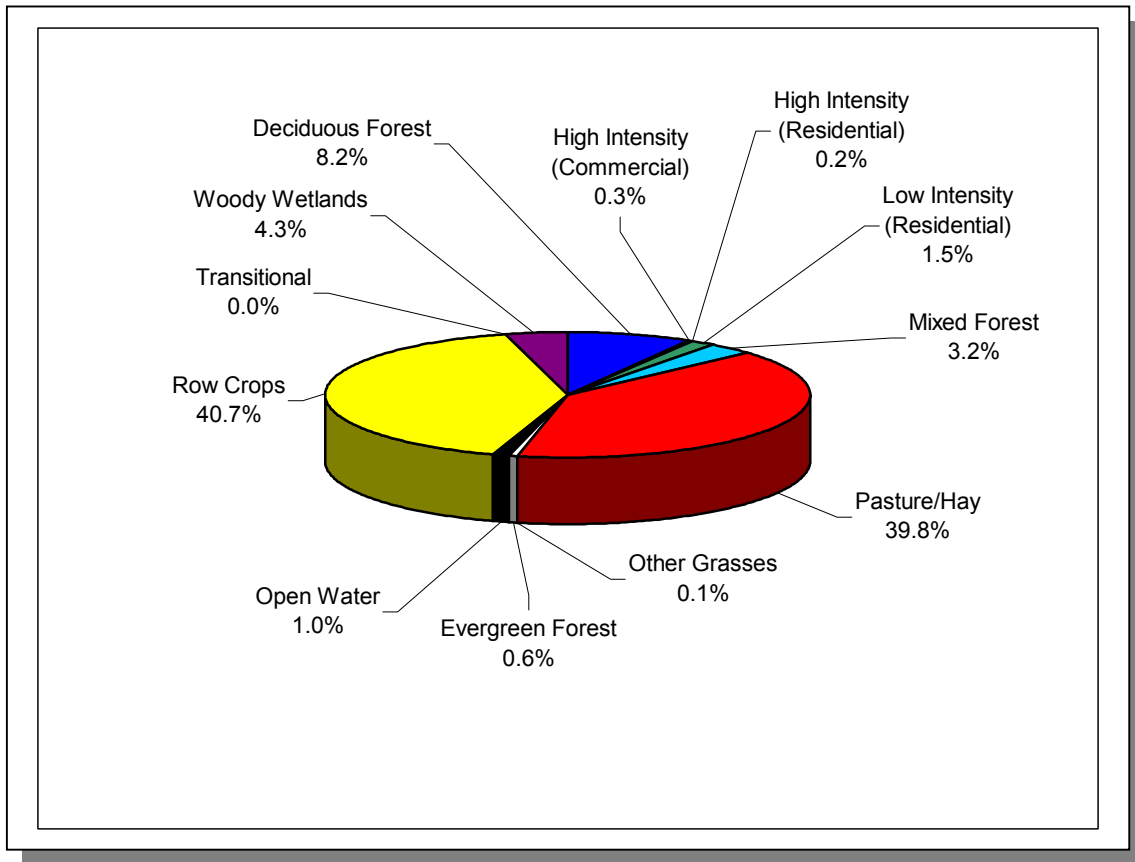


Figure 4-27. Land Use Distribution in Subwatershed 0801020403. More information is provided in NFFD-Appendix IV.

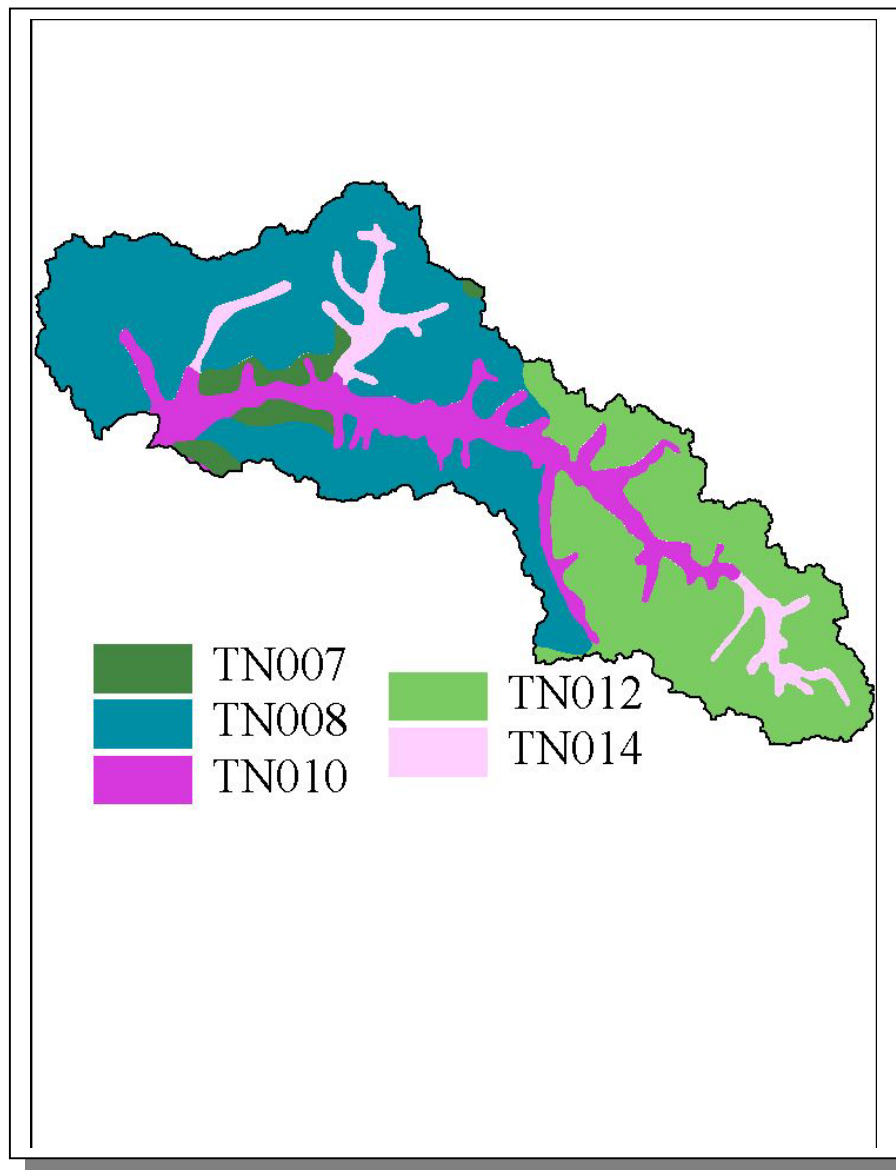


Figure 4-28. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0801020403.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN007	29.00	C	1.30	5.36	Silty Loam	0.48
TN008	2.00	C	1.38	5.20	Silty Loam	0.48
TN010	81.00	C	1.33	5.11	Silty Loam	0.44
TN012	1.00	C	2.52	5.13	Silty Loam	0.39
TN014	30.00	C	1.30	5.12	Silty Loam	0.47

Table 4-18. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0801020403. More information is provided in NFFD-Appendix IV.

County	COUNTY POPULATION		Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED		PERCENT CHANGE
	1990	1997 Est.		1990	1997	
Dyer	34,854	36,465	7.39	2,576	2,695	4.6
Gibson	46,315	48,083	33.74	15,625	16,221	3.8
Total	81,169	84,548		18,201	18,916	3.9

Table 4-19. Population Estimates in Subwatershed 0801020403.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Dyer	Gibson	2,190	972	932	40	0
Gibson	Gibson	287	118	110	4	4
Milan	Gibson	7,512	3,300	3,183	110	7
Newbern	Dyer	2,514	1,052	994	58	0
Trenton	Gibson	4,836	2,150	2,073	77	0
Yorkville	Gibson	355	142	7	133	2
Total		17,694	7,734	7,299	422	13

Table 4-20. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0801020403.

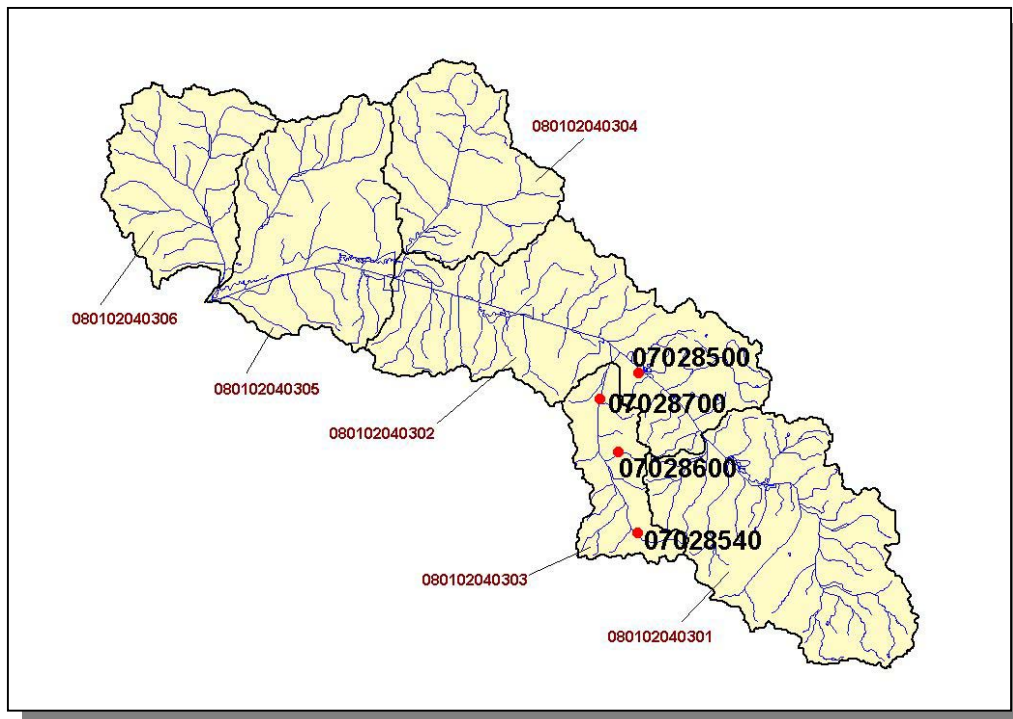


Figure 4-29. Location of Historical Streamflow Data Collection Sites in Subwatershed 0801020403. Subwatershed 080102040301, 080102040302, 080102040303, 080102040304, 080102040305, and 080102040306 boundaries are shown for reference. More information is provided in NFFD-Appendix IV.

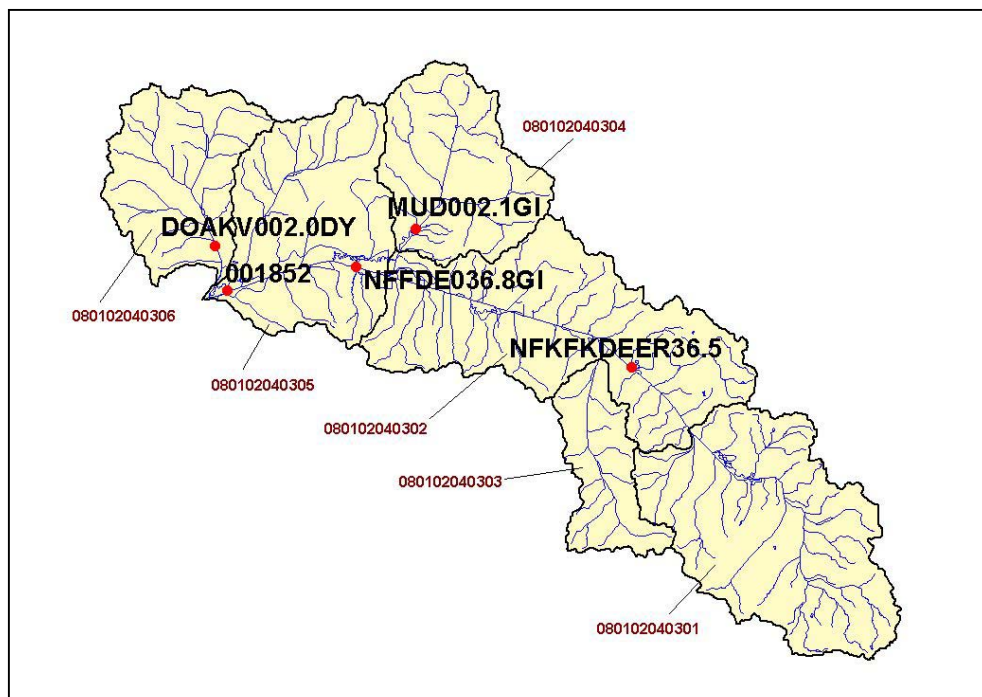


Figure 4-30. Location of STORET Monitoring Sites in Subwatershed 0801020403. Subwatershed 080102040301, 080102040302, 080102040303, 080102040304, 080102040305, and 080102040306 boundaries are shown for reference. More information is provided in NFFD-Appendix IV.

4.2.C.ii. Point Source Contributions.

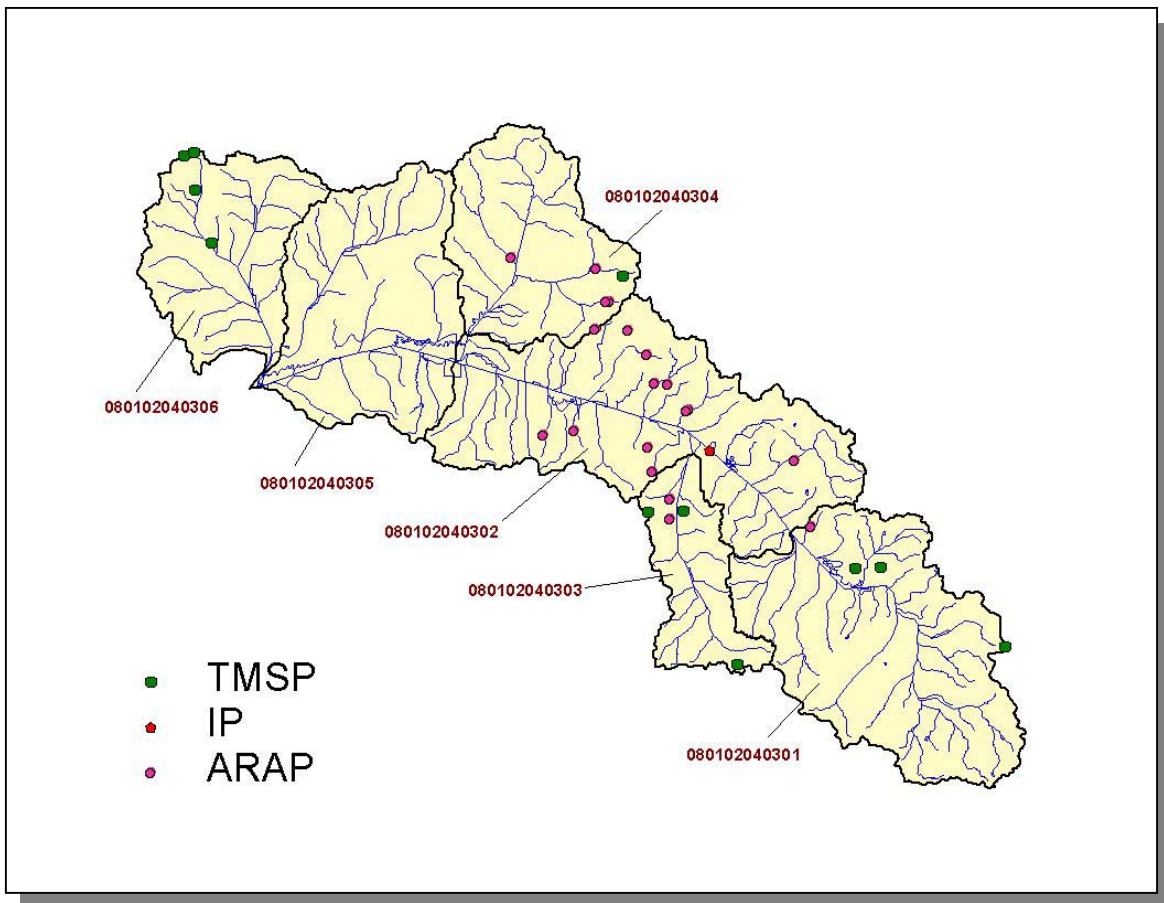


Figure 4-31. Location of Active Point Source Facilities in Subwatershed 0802020403. Subwatershed 080102040301, 080102040302, 080102040303, 080102040304, 080102040305, and 080102040306 boundaries are shown for reference. Tennessee Multi-Sector Permits (TMSP), green squares; Individual Permits, red pentagons; ARAP, magenta circles; Concentrated Animal Feeding Operations (CAFO), brown hexagons; Ready-Mix Concrete Permits (RMCP), turquoise stars; Mining Permits, gray triangles; Water Treatment Permits, Purple crosses. More information is provided in the following figures.

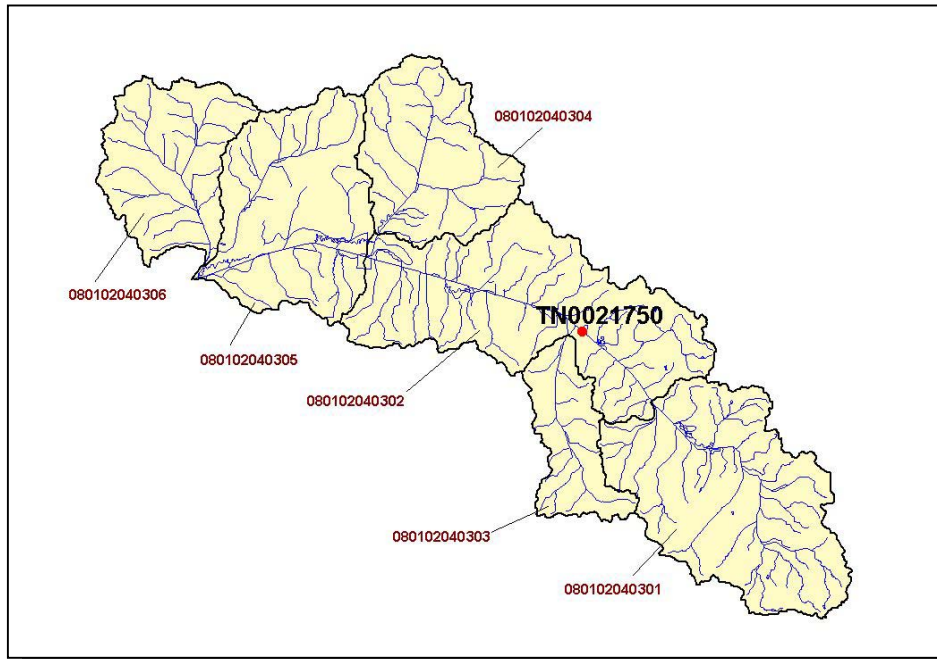


Figure 4-32. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 0801020403. Subwatershed 080102040301, 080102040302, 080102040303, 080102040304, 080102040305, and 080102040306 boundaries are shown for reference. More information, including the names of facilities, is provided in NFFD-Appendix IV.

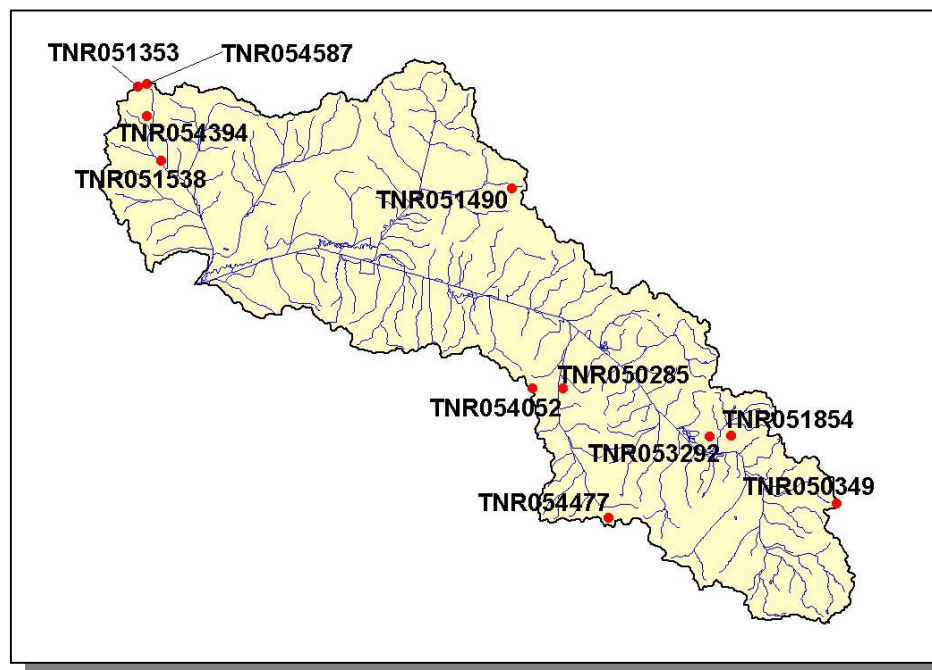


Figure 4-33. Location of TMSP Facilities in Subwatershed 0801020403. Subwatershed 080102040301, 080102040302, 080102040303, 080102040304, 080102040305, and 080102040306 boundaries are shown for reference. More information, including the names of facilities, is provided in NFFD-Appendix IV.

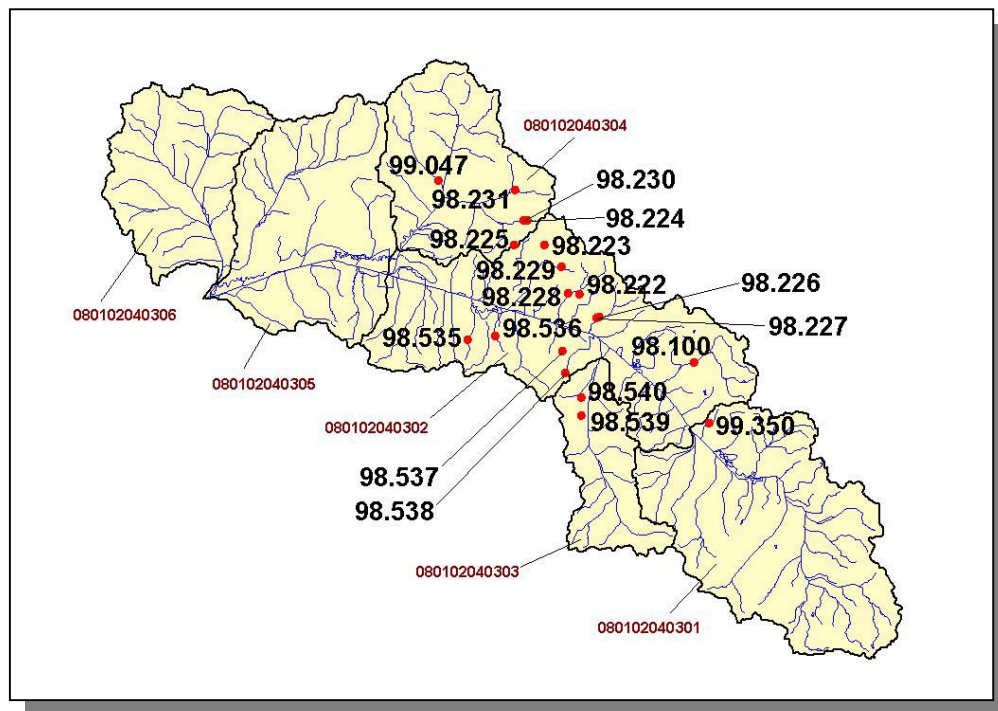


Figure 4-34. Location of ARAP Sites (Individual Permits) in Subwatershed 0801020403. Subwatershed 080102040301, 080102040302, 080102040303, 080102040304, 080102040305, and 080102040306 boundaries are shown for reference. More information, including the names of facilities, is provided in NFFD-Appendix IV.

4.2.A.ii.a. Dischargers to Water Bodies Listed on the 1998 303(d) List

There is one NPDES facility discharging to water bodies listed on the 1998 303(d) list in Subwatershed 0801020403:

- TN0021750 (Trenton Lagoon) discharges to North Fork Forked Deer River @ RM 35.9

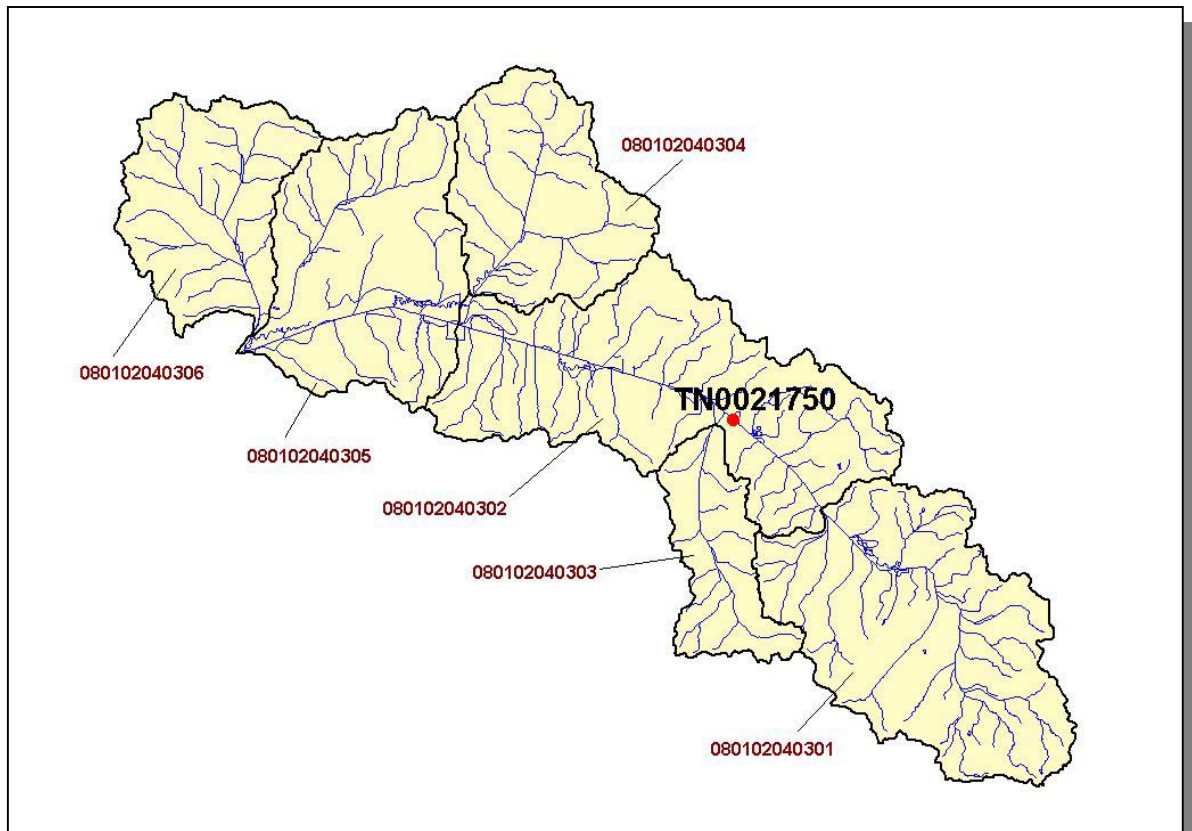


Figure 4-35. Location of NPDES Dischargers to Water Bodies Listed on the 1998 303(d) List in Subwatershed 0801020403. Subwatershed 080102040301, 080102040302, 080102040303, 080102040304, 080102040305, and 080102040306 boundaries are shown for reference. The names of facilities are provided in NFFD-Appendix IV.

PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0021750	4.60	4.69	4.82	4.04	0.75000

Table 4-21. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 0801020403. Data are in million gallons per day (MGD). Data were obtained from the USGS publication Flow Duration and Low Flows of Tennessee Streams Through 1992 or from permit files.

PERMIT #	CBOD ₅	pH	WET	NH ₃	FECAL	TRC	SETTLEABLE SOLIDS	TSS	DO
TN0021750	X	X	X	X	X	X	X	X	X

Table 4-22. Parameters Monitored for Daily Maximum (mg/L) Limits for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 0801020403. CBOD₅, Carbonaceous Biochemical Oxygen Demand (5-Day); WET, Whole Effluent Toxicity; TRC, Total Residual Chlorine; TSS, Total Suspended Solids; DO, Dissolved Oxygen.

4.2.C.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
3,577	9,568	81	9	0	2,939	27

Table 4-23. Summary of Livestock Count Estimates in Subwatershed 0801020403. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Dyer	40.4	40.4	0.8	2.8
Gibson	36.4	36.4	2.0	8.6
Totals	76.8	76.8	2.8	11.4

Table 4-24. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 0801020403.

CROPS	TONS/ACRE/YEAR
Grass (Hayland)	0.31
Grass (Pastureland)	0.50
Grass, Forbs, Legumes (Mixed Pasture)	0.80
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Corn (Row Crops)	11.01
Soybeans (Row Crops)	8.10
Sorghum (Row Crops)	6.30
Cotton (Row Crops)	15.28
Wheat (Close Grown Cropland)	3.88
Oats (Close Grown Cropland)	3.34
Conservation Reserve Program Land	0.46
Other Land in Farms	1.34
Farmsteads and Ranch Headquarters	0.50
Other Cropland not Planted	0.70
Nonagricultural Land Use	0.00

Table 4-25. Annual Estimated Total Soil Loss in Subwatershed 0801020403.

4.2.D. 0801020404.

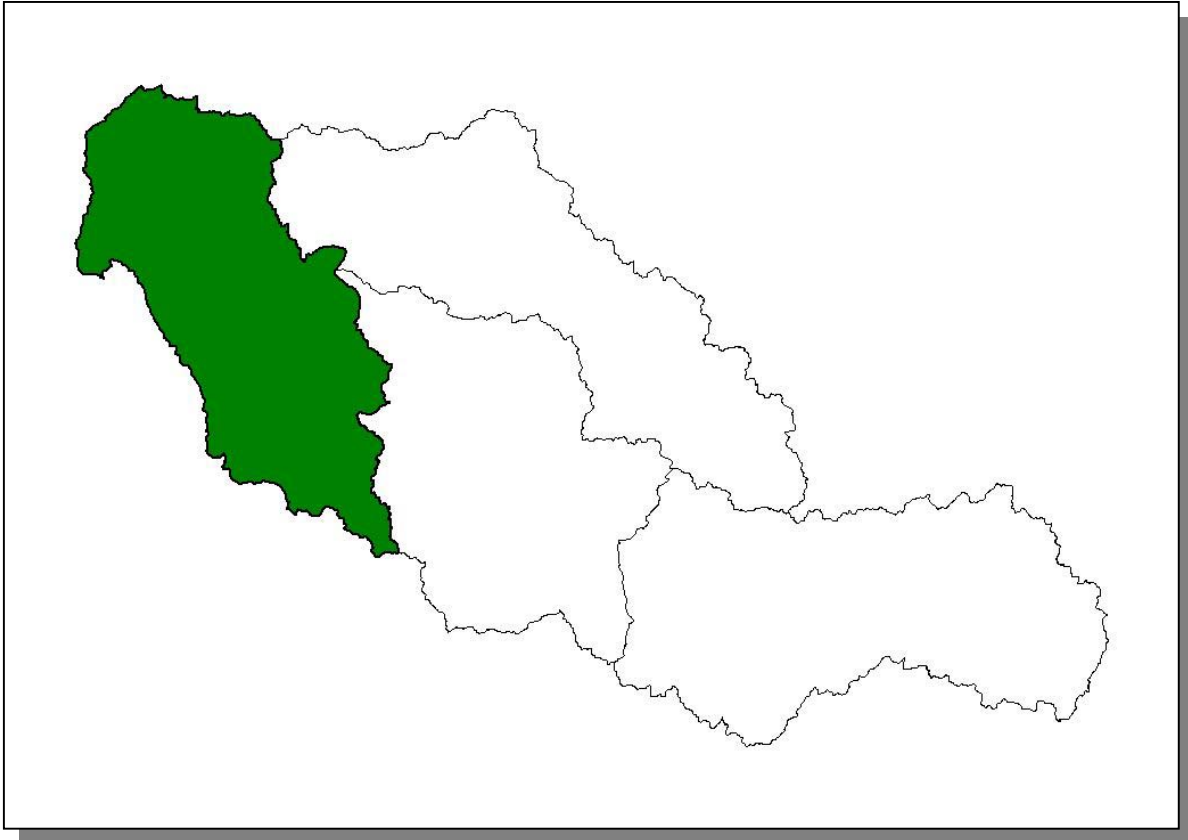


Figure 4-36. Location of Subwatershed 0801020404. All North Fork Forked Deer subwatershed boundaries are shown for reference.

4.2.D.i. General Description.

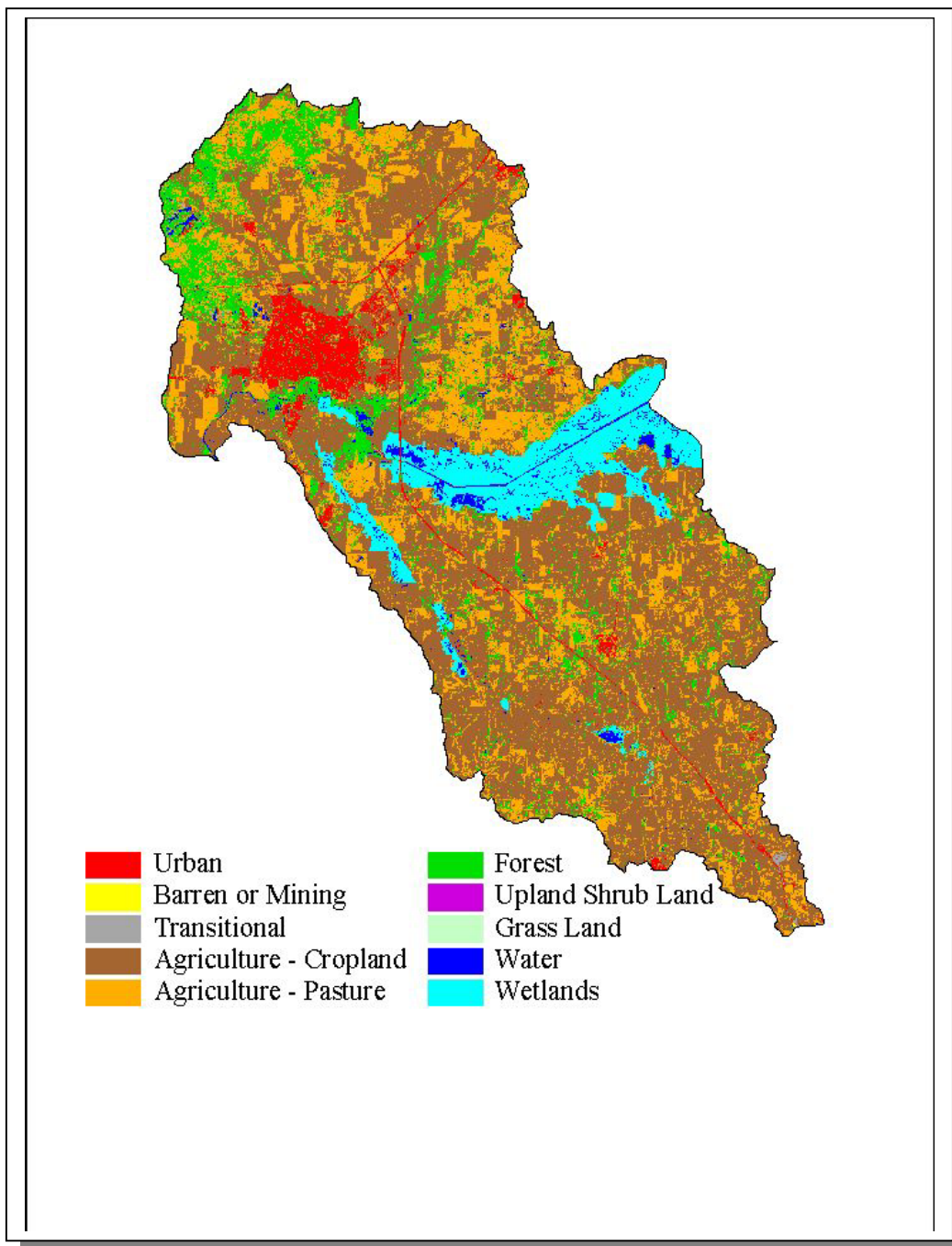


Figure 4-37. Illustration of Land Use Distribution in Subwatershed 0801020404.

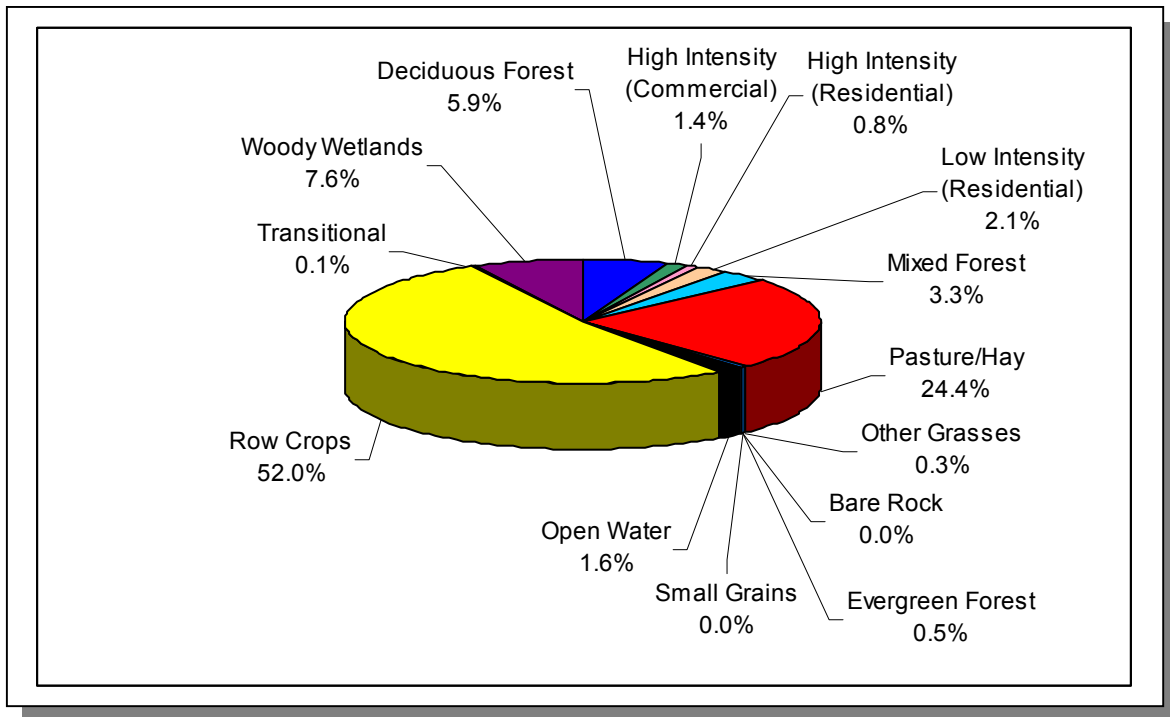


Figure 4-38. Land Use Distribution in Subwatershed 0801020404. More information is provided in NFFD-Appendix IV.

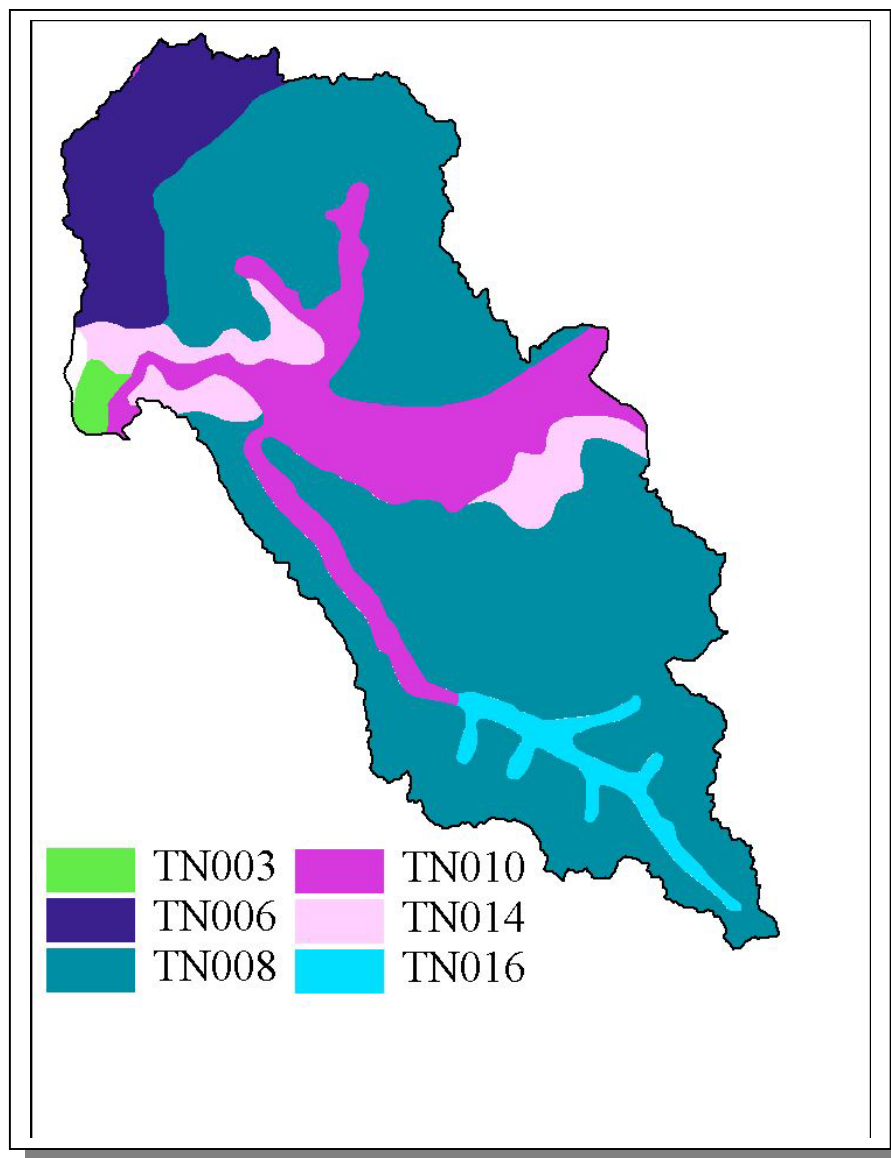


Figure 4-39. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0801020404.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN003	62.00	C	0.50	6.65	Silty Clay	0.33
TN005	10.00	C	1.79	6.68	Silty Loam	0.41
TN006	0.00	C	1.30	5.42	Silty Loam	0.48
TN008	2.00	C	1.38	5.20	Silty Loam	0.48
TN010	81.00	C	1.33	5.11	Silty Loam	0.44
TN014	30.00	C	1.30	5.12	Silty Loam	0.47
TN016	0.00	C	1.30	6.47	Silty Loam	0.44

Table 4-26. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 0801020404. More information is provided in NFFD-Appendix IV.

County	COUNTY POPULATION		Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED		PERCENT CHANGE
	1990	1997 Est.		1990	1997	
Crockett	13,378	13,841	24.84	3,324	3,439	3.5
Dyer	34,854	36,465	30.28	10,555	11,043	4.6
Total	48,232	50, 306		13,879	14,482	4.3

Table 4-27. Population Estimates in Subwatershed 0801020404.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Alamo	Crockett	2,400	1,044	1,001	43	0
Dyersberg	Dyer	16,317	7,041	6,993	48	0
Friendship	Crockett	468	203	196	7	0
Maury City	Crockett	781	318	22	288	8
Newbern	Dyer	2,514	1,052	994	58	0
Total		22,480	9,658	9,206	444	8

Table 4-28. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 0801020404.

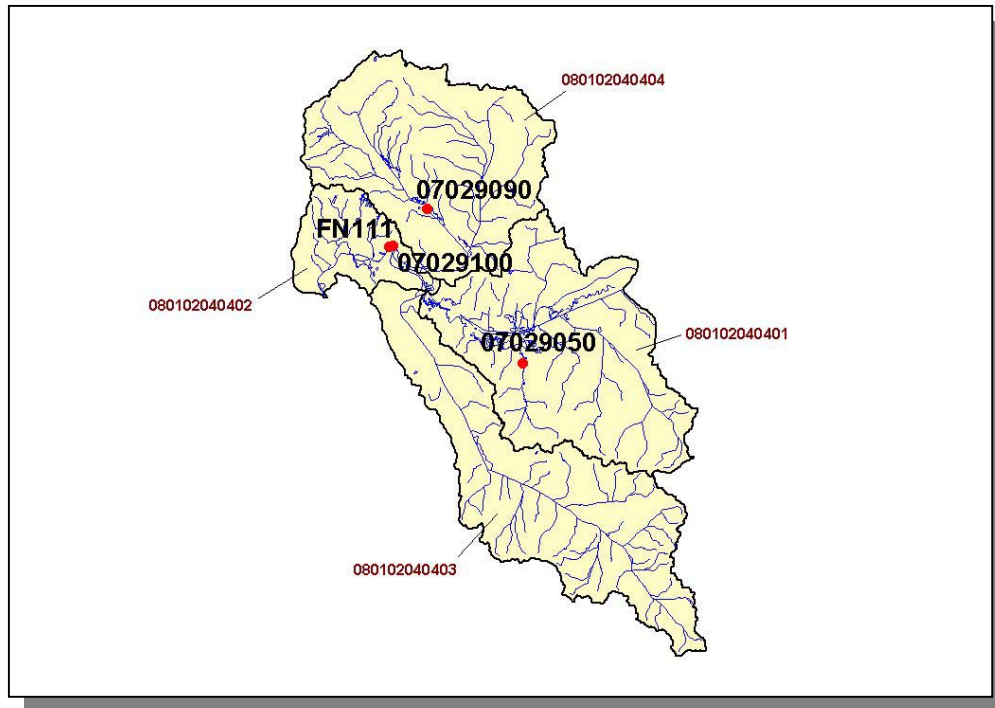


Figure 4-40. Location of Historical Streamflow Data Collection Sites in Subwatershed 0801020404. Subwatershed 0801020401, 0801020402, 0801020403, and 0801020404 boundaries are shown for reference. More information is provided in NFFD-Appendix IV.

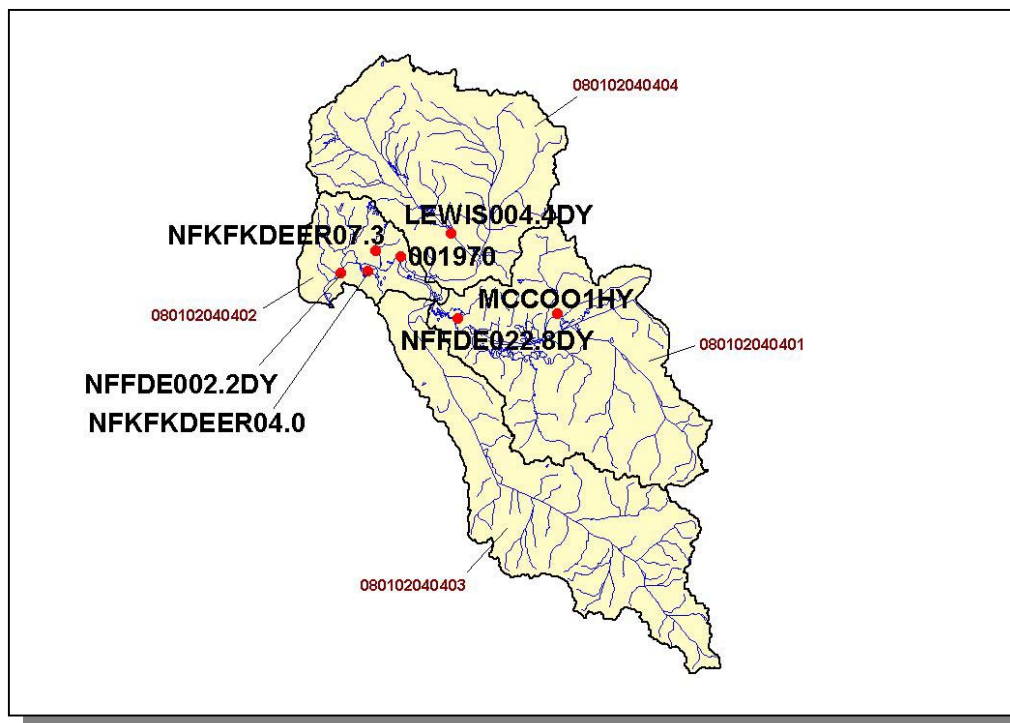


Figure 4-41. Location of STORET Monitoring Sites in Subwatershed 0801020404. Subwatershed 0801020401, 0801020402, 0801020403, and 0801020404 boundaries are shown for reference. More information is provided in NFFD-Appendix IV.

4.2.D.ii. Point Source Contributions.

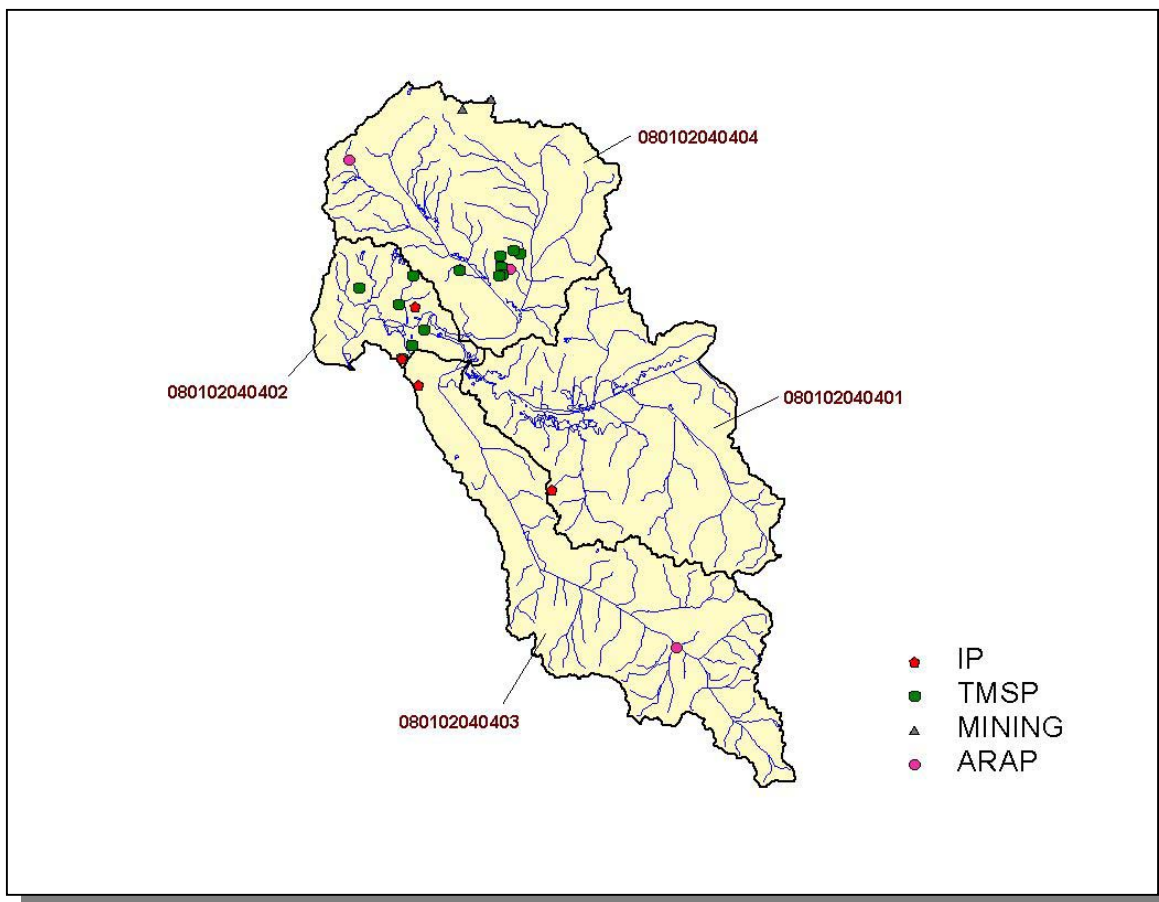


Figure 4-42. Location of Active Point Source Facilities in Subwatershed 0801020404. Subwatershed 080102040401, 080102040402, 080102040403, and 080102040404 boundaries are shown for reference. More information is provided in the following figures.

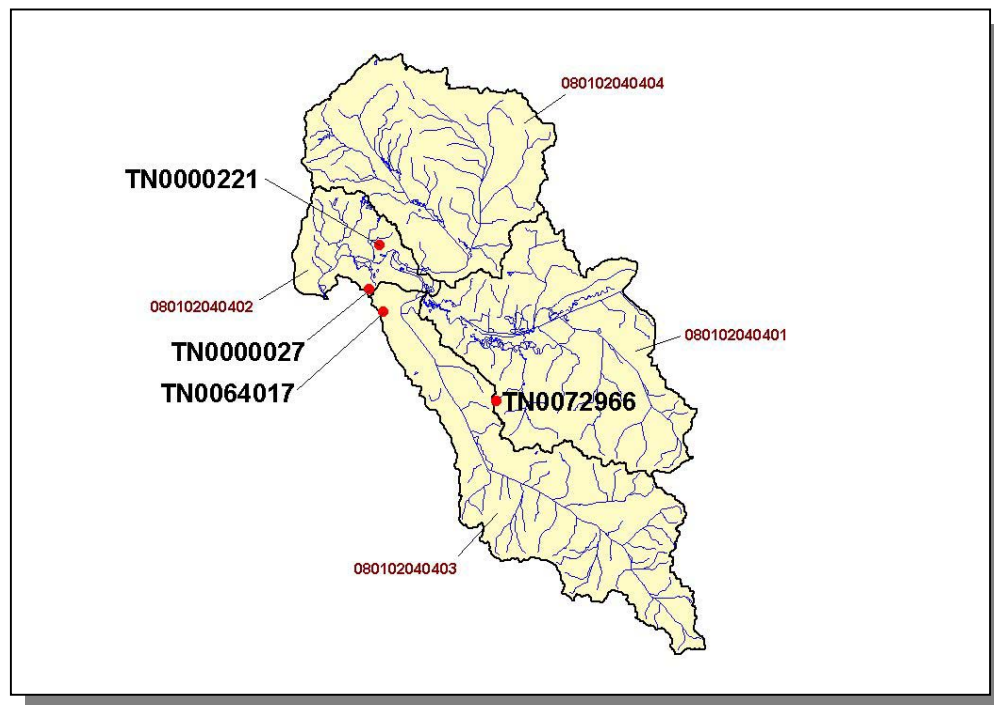


Figure 4-43. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 0801020404. Subwatershed 0801020401, 0801020402, 0801020403, and 0801020404 boundaries are shown for reference. More information is provided in NFFD-Appendix IV.

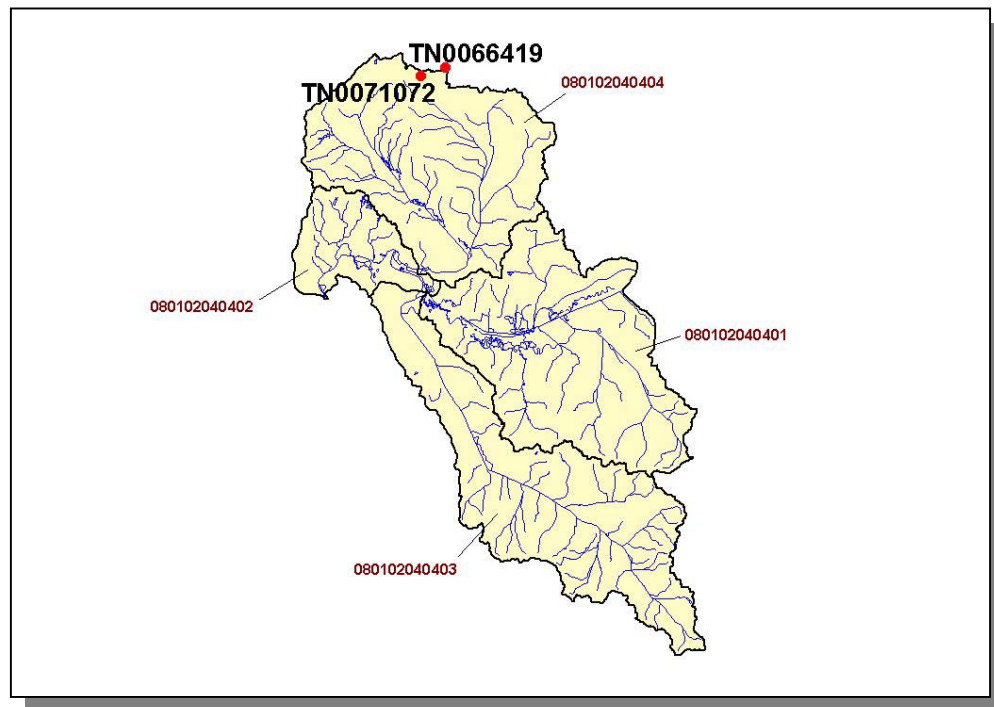


Figure 4-44. Location of Active Mining Sites in Subwatershed 0801020404. Subwatershed 0801020401, 0801020402, 0801020403, and 0801020404 boundaries are shown for reference. More information is provided in NFFD-Appendix IV.

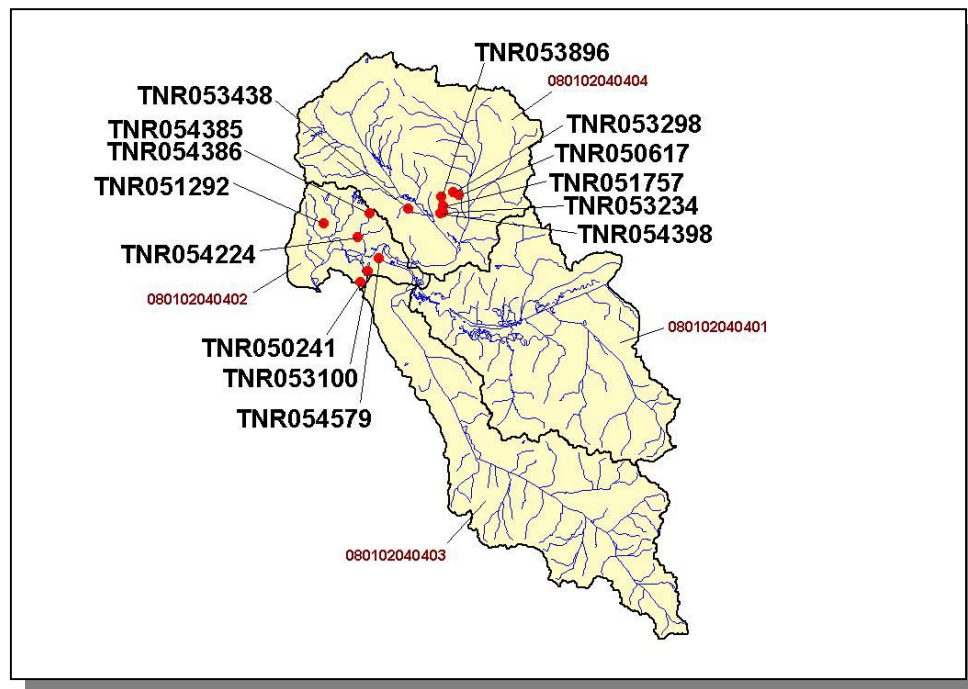


Figure 4-45. Location of TMSP Facilities in Subwatershed 0801020404. Subwatershed 080102040401, 080102040402, 080102040403, and 080102040404 boundaries are shown for reference. More information is provided in NFFD-Appendix IV.

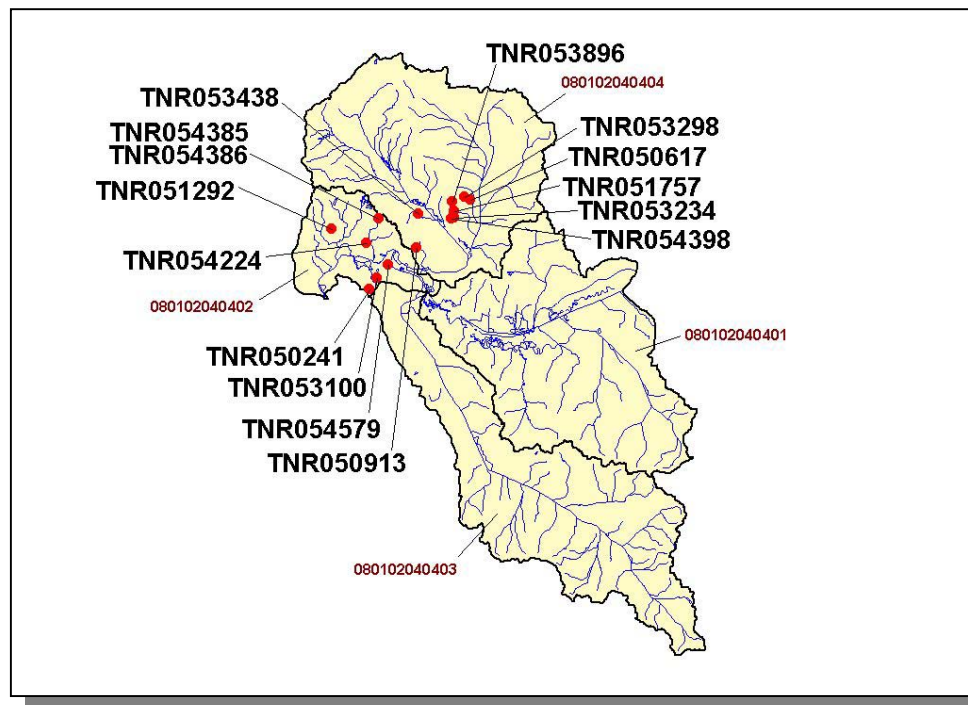


Figure 4-46. Location of ARAP Sites (Individual Permits) in Subwatershed 0801020404. Subwatershed 080102040401, 080102040402, 080102040403, and 080102040404 boundaries are shown for reference. More information is provided in NFFD-Appendix IV.

4.2.A.ii.a. Dischargers to Water Bodies Listed on the 1998 303(d) List

There are four NPDES facilities discharging to water bodies listed on the 1998 303(d) list in Subwatershed 0801020404:

- TN0000027 (Heckethorn Manufacturing) discharges to North Fork Forked Deer River @ RM 1.3
- TN0000221 (PolyOne Elastomers) discharges to an unnamed trib to North Fork Forked Deer River @ RM 6.2
- TN0064017 (Dr. Pepper/Pepsi-Cola Bottling Co.) discharges to an unnamed trib to Pond Creek @ RM 1.2
- TN0072966 (Trunkline Gas Co.) discharges to an unnamed trib to Nash Creek @ RM 3.0

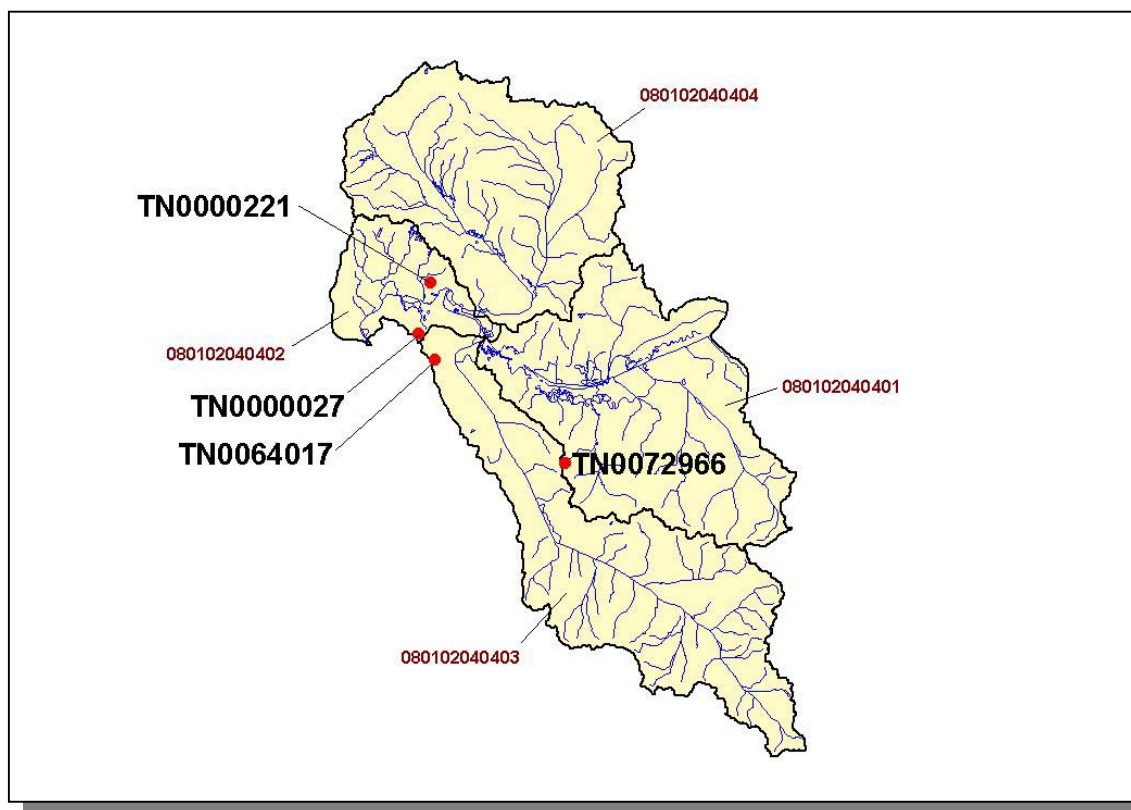


Figure 4-47. Location of NPDES Dischargers to Water Bodies Listed on the 1998 303(d) List in Subwatershed 0801020404. Subwatershed 080102040401, 080102040402, 080102040403, and 080102040404 boundaries are shown for reference. The names of facilities are provided in NFFD-Appendix IV.

PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0000027	0.00	0.00	0.00	0.00	0.14000
TN0000221				0.00	0.04300
TN0064017					0.03600
TN0072966			0.00		0.02500

Table 4-29. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 0801020404. Data are in million gallons per day (MGD). Data were obtained from the USGS publication Flow Duration and Low Flows of Tennessee Streams Through 1992 or from permit files.

PERMIT #	TSS	BOD ₅	COD	pH	Zn	OIL and GREASE	NH ₃
TN0000221	X	X	X	X	X	X	X

Table 4-30. Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 0801020404. TSS, Total Suspended Solids; BOD₅, Biochemical Oxygen Demand (5-Day); COD, Chemical Oxygen Demand.

PERMIT #	pH	PCB	TRC	OIL and GREASE	TSS
TN0000027	X		X	X	
TN0064017	X		X		X
TN0072966	X	X		X	X

Table 4-31. Parameters Monitored for Daily Maximum (mg/L) Limits for NPDES Dischargers to Waterbodies Listed on the 1998 303(d) List in Subwatershed 0801020404.

4.2.D.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Milk Cow	Cattle	Chickens	Chickens Sold	Hogs	Sheep
807	2	6,679	7	0	630	9

Table 4-32. Summary of Livestock Count Estimates in Subwatershed 0801020404. According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Crockett	15.1	15.1	0.3	1.6
Dyer	40.4	40.4	0.8	2.8
Total	55.5	55.5	1.1	4.4

Table 4-33. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 0801020404.

CROPS	TONS/ACRE/YEAR
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Corn (Row Crops)	6.30
Soybeans (Row Crops)	8.09
Cotton (Row Crops)	7.59
Sorghum (Row Crops)	5.90
Wheat (Close Grown Cropland)	3.88
Oats (Close Grown Cropland)	3.34
Grass (Hayland)	0.19
Grass (Pastureland)	1.39
Grass, Forbs, Legumes (Mixed Pasture)	0.32
Conservation Reserve Program Land	0.45
Other Land in Farms	0.15
Other Cropland not Planted	1.36
Farmsteads and Ranch Headquarters	0.95

Table 4-34. Annual Soil Loss in Subwatershed 0801020404.